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## (I) 四國地方

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## Gravity Survey along the Lines of Precise Levels throughout Japan by Means of a WORDEN Gravimeter

## Part I. Shikoku District

August, 1953

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# 序

從來地震研究所に於ては地震の發生，地殻構造等に關する研究に寄與するため重力の調査研究を行つてきたのであるが，幸い昭和26年3月，文部省其他關係當局の諒解のもとに，ウオルドン重力計を輸入して以來，この方面の研究を一段進捗せしめることが出來た．

この重力計による測定は本邦の各地方にわたつて實施され，それらの成果は順次發表される豫定である．ここに地震研究所彙報別冊第4號を出版してこれらの成果を輯錄することにした．

この測定の實施にあたり各官廳，地方廳其他の各位から寄せられた好意と援助に對し深甚なる謝意を表する．

昭和28年8月15日

地震研究所長　那　須　信　治

# *Gravity Survey along the Lines of Precise Levels throughout Japan by Means of a WORDEN Gravimeter.*

## Part I. Shikoku District.

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## 1. Introduction

Since the early days of its existence, the Earthquake Research Institute has been much interested in the fact that the gravity anomalies in Japan show a very characteristic distribution in and near the areas which are active from the seismological point of view. In 1929, it was shown by C. TSUBOI (1929) that a close relationship exists between the distributions of BOUGUER gravity anomalies and of epicentres of conspicuous earthquakes in and near Japan. Since gravity anomalies are indications of abnormal underground mass distributions, the relationship found was thought to be undoubtedly an important clue for understanding reasonably the nature of mechanism of earthquake occurrence, particularly in relation to the detailed structure of the outer part of the earth.

At the time when TSUBOI's study was published, the values of BOUGUER anomalies were known at 122 land stations which are distributed rather evenly throughout Japan with an average mutual distance of about 50 km. The measurements at these stations had been made by H. NAGAOKA, S. SHINJO, R. OTANI, M. MATUYAMA and others under the auspices of the Geodetic Commission of Japan by the pendulum method. An important addition to these materials was made by M. MATUYAMA, N. KUMAGAI and others (1936, 1940) when, by means of a MEINESZ apparatus, they made gravity measurements at some 60 stations on the neighbouring seas of Japan, also under the auspices of the same Commission. Although the number of stations, nearly 200 in all, is large enough to

yield results to be based on for tracing general trends of isoanomaly lines in the area concerned, it was soon felt that no further advance of the studies of the important problem stated above can be expected unless a more detailed and systematic gravity survey is carried out.

Evidently, in order to accomplish such a detailed survey effectively, the time needed for measurement at each gravity station must be reduced as much as possible. Efforts were therefore made by C. TSUBOI and others (M. KIMURA : 1933, 1934 ; C. TSUBOI and T. FUCHIDA : 1937) to establish a new method of gravity measurement which will fulfil such requirements. After many preliminary experiments, two sets of two-quartz pendulum apparatus with necessary accessories were finally completed, and, by means of wireless timing communications between the two, installed respectively at the base and field stations, the accurate measurement of gravity within a considerably reduced time was made possible. By using these new apparatuses, nearly 100 stations, at an interval of about 20 km on the average, were established in the Kwanto district, an area noted for its seismic activity (T. FUCHIDA : 1935). These detailed surveys disclosed several zones with steep gradient of gravity anomaly here and there in the district, which the widely-spaced older measurements had failed to detect. The locations of these steep gradients could be correlated to minor seismic areas to some extent and this fact convinced us more strongly of the importance of the gravity survey for earthquake studies.

In spite of the developments made in the techniques of measurements as stated above, still one whole day at least was required for one gravity station including the installation and transportation work. This was far from satisfactory for our purpose of the quick coverage of gravity measurements throughout Japan.

As to the theoretical side, on the other hand, C. TSUBOI (1937, 1938, 1939, 1940, 1941, 1942) has developed the FOURIER series method for interpreting gravity anomalies. This method, with reasonable and simple assumptions, has opened a possibility to calculate directly the underground mass distribution from observed gravity anomalies. The method has proved to be a very powerful weapon for attacking various gravity problems and in fact many actual problems have been successfully studied, particularly in relation to isostasy.

We thus thought the time to be ripe for us to take a further and more systematic step toward the precise investigation of the gravity distribution in Japan. In addition, two events occurred which strongly

stimulated us to push forward in this line.

The first event is concerned with a strong earthquake which took place near the town of Nikkô, Tochigi Prefecture, on December 26, 1949. At that time, a gravity party from the Geological Survey of Japan, equipped with a North American gravimeter, happened to be engaged in the gravity prospecting work near the epicentre of the earthquake. No chance was lost by the party to repeat determinations of the gravity difference between the towns of Nikkô and Imaichi, both very near the epicentre. According to the report of the party (K. IIDA, M. HAYAKAWA and K. KATAYOSE: 1950), the gravity differences between the two towns were as follows:

Table I. Gravity Differences (Imaichi-Nikkô)

| Date | | Gravity Difference |
|---|---|---|
| Dec. | 30—31, 1949 | 61.70 mgal |
| March | 28—29, 1950 | 61.55 |
| March | 16—17, 1951 | 61.70 |

These data are very interesting in that they apparently suggest some change in the difference of the values of gravity according to time, although it may be due either to mere observation errors or to an eventual change in the height difference between the two towns by some 45 cm. We know that the change of this magnitude is by no means unusual in seismic areas.

The second event is concerned with the great Nankaidô earthquake of December 21, 1946. T. OKUDA (1951) of the Geographical Survey Institute, who measured the deviations of the vertical at several trigonometrical points in the meizoseismal area of this great earthquake, found that the values unmistakably differ from those of older measurements made at the same points before the earthquake. The horizontal displacements of the trigonometrical points due to the deformations of the earth's crust were notable (GEOGRAPHICAL SURVEY INSTITUTE: 1952) as were the cases of several other great earthquakes. These displacements may result in apparent changes in the deviation of the vertical at these points. But the changes in the deviation observed by OKUDA are too large to be attributed to the deformations, not to say to observational errors. The systematic distribution of the changes both in magnitude and direction with respect to the position of the epicentre of the earthquake of 1946 is also another indirect proof of their reality. If the changes are some-

thing real, the change in the direction of the vertical itself is presumably the most plausible explanation for them. The change in the deviation of the vertical is nothing but a change in the form of the geoid and the latter cannot be produced without some change in the subterranean density distribution. The change in gravity will necessarily accompany this, although the mode of change will differ according to circumstances. In fact, OKUDA calculated the change in the underground density distribution by which the observed changes in the deviation of the vertical can be accounted for and even proceeded to predict the accompanying change in the gravity distribution.

These findings, not decisive yet as they are, have attracted our interest very much. Thus, in addition to the detailed gravity survey, a new problem has confronted us, viz. whether the gravity changes with time or not. The desirability of execution of our gravity project was greatly enhanced.

Obviously, the most important point in studying these problems is how to measure gravity values with a high accuracy at a number of identifiable stations within the shortest possible time. Thus, naturally, the gravimeter has come into question.

Incidentally, Dr. G. P. WOOLLARD of University of Wisconsin, U.S.A., visited us carrying a WORDEN gravimeter in 1948, during his journey made for the world gravity measurements. This visit of Dr. WOOLLARD fortunately afforded us an opportunity to become acquainted with the working behavior of the instrument. In consequence, we became convinced of the fact that the WORDEN gravimeter is, if not the only one, among the instruments most dependable for our purpose.

The Earthquake Research Institute applied to the Government for defrayal of the expense necessary for purchasing a WORDEN gravimeter, which application was fortunately granted. In this connection, we have the pleasure of expressing our gratitude to the Government officials for their support and good understanding on this matter.

An order for this instrument was at once placed with the Houston Technical Laboratories, Houston, Texas, U.S.A. The gravimeter reached us safely in due course of time. The instrument number is 60.

## 2. Programme

Careful measurements by a WORDEN gravimeter can detect a small gravity difference of a few hundredths of a milligal. Several preliminary trips proved the dependability of the gravimeter to be beyond doubt.

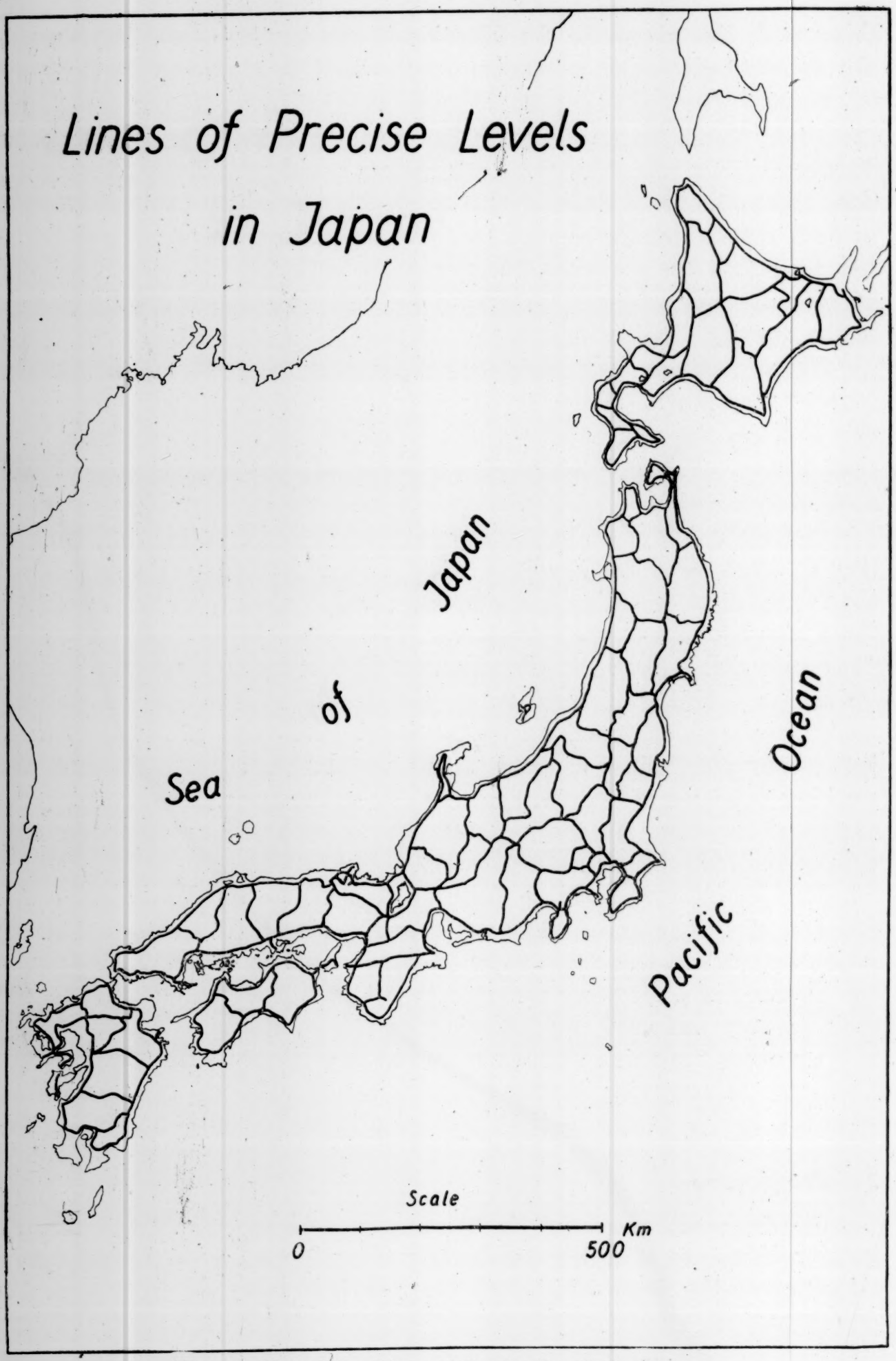


Fig. 1. Net of the Lines of Precise Levels in Japan.

We became well experienced in the use of the gravimeter and were ready to start measurements.

As is well known, in order to secure an accuracy of 0.01 mgal in the determination of gravity anomalies or in the comparison of the old and new measurements, the height of each gravity station must be known to the degree of 3 cm. To measure the height by levellings with this degree of accuracy is not a very difficult task, if the survey is confined to a small area as in the case of prospecting. But things are quite different for us, since, according to our plan, the gravity survey is to be extended to a great many points which are distributed over a wide

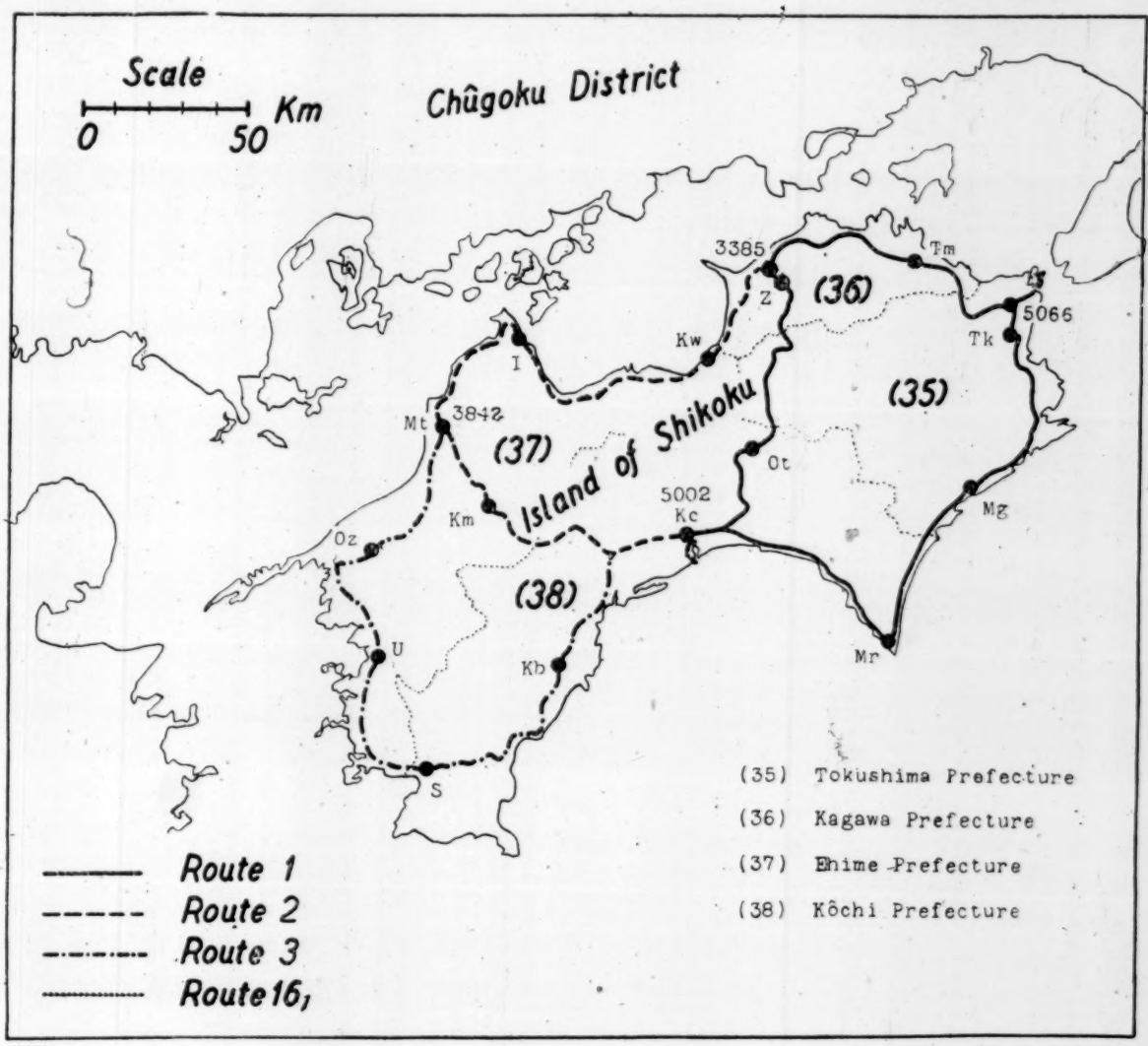


Fig. 2. Lines of Precise Levels on the Island of Shikoku with Prefecture Boundaries.

area throughout Japan. This circumstance naturally imposes a practical limit on the scope of our project. After many considerations, we have come to the conclusion that our gravity measurements shall be made along the lines of precise levels at the sites of bench marks. The net of

the lines of precise levels in Japan is shown in Fig. 1. Although the net is pretty dense as such, it is unfortunately not dense enough to allow us to state that the bench marks are two-dimensionally or areally distributed. Of course an areal survey of gravity is desirable, but in that case, the work for determining the accurate heights of the stations would be prohibitively enormous.

On the lines of precise level in Japan, the bench marks are laid at every 2 km and their heights are known very accurately. The horizontal positions of the bench marks on the other hand, can be determined from maps (scale 1/50,000) pretty accurately, at least to a decimal of one minute angle. The easiness of identification of the very point of the measurement is another advantage in using the bench mark as the point of gravimeter measurement. This is particularly important for us, because, as was stated before, we have in mind the possibility of a re-survey of gravity values in order to investigate the suspected secular variations in the gravity values.

The first series of the measurements was decided to be made on the island of Shikoku. The island has an area a little less than 19,000 km$^2$. This island comprises four prefectures, viz., Tokushima, Kagawa, Ehime and Kôchi. The lines of precise levels on this island is roughly shown in Fig. 2.

### 3. The WORDEN Gravimeter

As is well known, the WORDEN gravimeter is equipped with two dials, which are called the large and small dials. One division on the large dial roughly corresponds to 4 mgal, while that on the small dial to 0.9150 mgal in our instrument. The latter figure has been supplied by the maker of the instrument and taken as reliable at least for the time being. We have very frequently measured gravity differences between Tokyo, Chiba and Mitaka by means of the gravimeter and made it certain that no appreciable change has occurred in the constant of the gravimeter. We have found out by experience that, notwithstanding the pains we have taken to set the large dial to its certain scale positions very accurately, one large dial division in terms of small dial divisions is apparently at variance. Table II will illustrate this uncertainty. Two readings in a set given in the table were made consecutively at one same place. As may be seen from the table, $\Delta SD/\Delta LD$ ranges from 4.38 to 4.54 and appears to show no systematic change according to the large dial value. Thus we believe that the gravimeter may be most wisely

Table II. Small Dial Scales and Large Dial Scales.

| LD | SD | ΔSD/ΔLD | LD | SD | ΔSD/ΔLD | LD | SD | ΔSD/ΔLD | LD | SD | ΔSD/ΔLD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 430 | 5141 | } 4.45 | 402 | 6325 | } 4.45 | 418 | 6169 | } 4.46 | 411 | 5883 | } 4.44 |
| 436 | 2470 | | 409 | 3211 | | 430 | 813 | | 417 | 3200 | |
| 431 | 2987 | } 4.49 | 402 | 5017 | } 4.43 | 418 | 6139 | } 4.44 | 413 | 6318 | } 4.50 |
| 436 | 743 | | 410 | 1475 | | 423 | 3917 | | 417 | 4518 | |
| 423 | 6650 | } 4.47 | 410 | 6137 | } 4.48 | 413 | 5695 | } 4.45 | 406 | 6728 | } 4.50 |
| 436 | 843 | | 414 | 4346 | | 423 | 1250 | | 413 | 3528 | |
| 419 | 6791 | } 4.43 | 414 | 6301 | } 4.51 | 405 | 6180 | } 4.52 | 406 | 3126 | } 4.54 |
| 423 | 5017 | | 420 | 3593 | | 413 | 2563 | | 410 | 1310 | |
| 419 | 5259 | } 4.43 | 416 | 7044 | } 4.58 | 394 | 6616 | } 4.45 | 410 | 5895 | } 4.38 |
| 427 | 1712 | | 420 | 5211 | | 405 | 1714 | | 415 | 3707 | |
| 418 | 5023 | } 4.47 | 406 | 6270 | } 4.51 | 390 | 6299 | } 4.48 | 410 | 2496 | } 4.44 |
| 427 | 998 | | 416 | 1757 | | 394 | 4509 | | 415 | 274 | |
| 418 | 6775 | } 4.45 | 400 | 5637 | } 4.43 | 390 | 5191 | } 4.43 | 406 | 5685 | } 4.48 |
| 429 | 1880 | | 406 | 2978 | | 397 | 2093 | | 410 | 3894 | |
| 418 | 6473 | } 4.46 | 400 | 3327 | } 4.42 | 397 | 5794 | } 4.42 | 402 | 6098 | } 4.53 |
| 429 | 1570 | | 404 | 1558 | | 404 | 2697 | | 406 | 4285 | |
| 418 | 6491 | } 4.43 | 404 | 4341 | } 4.44 | 404 | 5507 | } 4.49 | 402 | 5603 | } 4.50 |
| 429 | 1615 | | 410 | 1677 | | 410 | 2810 | | 412 | 1099 | |
| 420 | 5624 | } 4.47 | 410 | 3699 | } 4.45 | 410 | 5773 | } 4.49 | 403 | 6024 | } 4.49 |
| 429 | 1602 | | 416 | 1027 | | 417 | 2633 | | 412 | 1980 | |
| 414 | 5952 | } 4.52 | 416 | 5347 | } 4.53 | 417 | 4925 | } 4.51 | 403 | 6199 | } 4.46 |
| 420 | 3239 | | 426 | 820 | | 420 | 3573 | | 410 | 3077 | |
| 409 | 6216 | } 4.53 | 426 | 5213 | } 4.49 | 411 | 6173 | } 4.43 | | | |
| 414 | 3950 | | 430 | 3418 | | 420 | 2185 | | | | |

used by exclusively resorting to the small dial. Therefore if the gravity difference between any two successive field stations is anticipated to be too large to be covered with the large dial at the same setting, the following procedure was adopted. At the first station, two readings are taken with the large dial successively fixed at two different settings; the first setting being the same as at its preceding station and the second such as will allow the measurement at the next station possible without any change in the large dial setting.

Before showing an example of measurements which were made according to this scheme, it will be appropriate to describe small corrections applied to the gravimeter readings against the effects of the earth tides and of the height of the instrument above the bench mark at which the measurement was made.

### 4. Corrections for the Earth Tides and for the Heights of the Instrument above the Bench Marks

The corrections for the earth tides were calculated by the aid of the

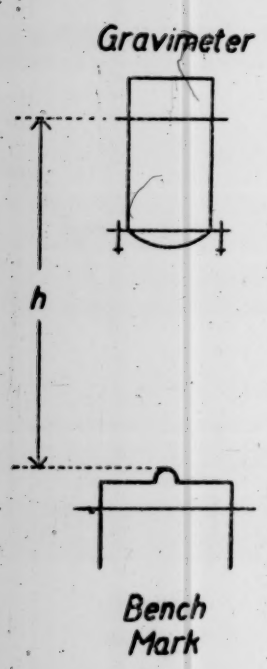


Fig. 3. Height of the Instrument above the Bench Mark.

useful table prepared by J. B. DAMREL and published by the Houston Technical Laboratories (1951). In order to know the local hour angles of the moon and the sun for which the corrections are to be calculated, the Abridged Nautical Almanac published by the Maritime Safety Agency, Japan, was resorted to.

The correction for the height of the instrument above the bench mark was also made in order to get the gravity value at the very height of the mark itself. The height of a fixed mark of the gravimeter above the bench mark was read at each measurement (Fig. 3). This varied from 27 cm to more than 1 m according to circumstances. The correction $(0.3086 \times h)$ was applied in order to get the gravity value at the very height of the bench mark.

## 5. Actual Examples of Gravimeter Readings

Now Table III shows a part of the results of our actual measurements. This will be enough to illustrate how our measurements were made.

In the table, $\delta T$ means the time interval between the measurements at two successive stations which was necessary for moving. $\sum \delta T$ is the sum of $\delta T$; the time between two consecutive readings at one station which were occasionally necessary not being included in it. $\sum \delta T$ is therefore the net total time which was spent in installations of the instrument and transportations. $LD$ is the reading of the large dial, while $SD$ is that of the small dial. $h$ is the height of the instrument above the bench mark. $E.T.$ is the correction for the earth tides. $\delta g$ is the difference in the gravity between two successive stations and $\sum \delta g$ is the cumulative sum of $\delta g$. $\sum \delta g$ is therefore the difference in the gravity at a field station and at the station which was taken as the reference. In our present case, Zentsûji was taken as the reference station for the sake of convenience.

The procedure which is the same in principle was also used to connect the measurements made on two consecutive days. The evening reading of the first day and the morning reading of the second day at a lodging place are connected as illustrated in Table IV.

## 6. Flow of the Gravimeter Spring

The correction against the flow of the gravimeter spring is essen-

Table III. A Part of the Results of Actual Measurements.

| Station No. | Bench Mark No. | Time 1951 IV 16 | $\delta T$ | $\sum\delta T$ | $LD$ | $SD$ | $h$ (cm) | 0.9150 × $SD$ (0.01 mgal) | 0.3086 × $h$ (〃) | $E.T.$ (〃) | Sum of Left Three (〃) | $\delta g$ (〃) | $\sum\delta g$ (〃) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ... | .... | .. .. | . .. | .. .. | ... | .... | .. | .... | .. | .. | .... | .... | .... |
| | | h m | h m | h m | | | | | | | | | |
| 112 | 5043 | 10 57 | 64 22 | | 420 | 4035 | 33 | 3692 | 10 | 0 | 3702 | | − 4176 |
| | | | 0 15 | | | | | | | | | − 372 | |
| 113 | 5045 | 11 12 | | 64 37 | 〃 | 3619 | 44 | 3311 | 14 | 0 | 3325 | | − 4553 |
| | | | 2 14 | | | | | | | | | 1456 | |
| 114 | 5047 | 13 26 | | 66 51 | 〃 | 5211 | 47 | 4768 | 15 | −2 | 4781 | | − 3097 |
| 〃 | 〃 | 13 28 | | | 416 | 7044 | 〃 | 6445 | 15 | −2 | 6458 | | |
| | | | 0 19 | | | | | | | | | −4853 | |
| $114_R$ | | 13 47 | | 67 10 | 〃 | 1757 | — | 1608 | — | −3 | 1605 | | − 7950 |
| 〃 | | 13 52 | | | 406 | 6270 | — | 5737 | — | −3 | 5734 | | |
| | | | 0 20 | | | | | | | | | −2998 | |
| 115 | 5051 | 14 12 | | 67 30 | 〃 | 2978 | 45 | 2725 | 14 | −3 | 2736 | | −10948 |
| 〃 | 〃 | 14 14 | | | 400 | 5637 | 〃 | 5158 | 14 | −3 | 5169 | | |
| | | | 0 23 | | | | | | | | | −2113 | |
| 116 | 5052 | 14 37 | | 67 53 | 〃 | 3327 | 50 | 3044 | 15 | −3 | 3056 | | −13061 |
| 〃 | 〃 | 14 39 | | | 404 | 1558 | 〃 | 1426 | 15 | −3 | 1438 | | |
| | | | 0 34 | | | | | | | | | 2545 | |
| 117 | 5054 | 15 13 | | 68 27 | 〃 | 4341 | 46 | 3972 | 14 | −3 | 3983 | | −10516 |
| 〃 | 〃 | 15 15 | | | 410 | 1677 | 〃 | 1534 | 14 | −3 | 1545 | | |
| | | | 0 15 | | | | | | | | | 1855 | |
| 118 | 5055 | 15 30 | | 68 42 | 〃 | 3699 | 51 | 3385 | 16 | −1 | 3400 | | − 8661 |
| 〃 | 〃 | 15 32 | | | 416 | 1027 | 〃 | 940 | 16 | −1 | 955 | | |
| | | | 0 18 | | | | | | | | | 3952 | |
| 119 | 5057 | 15 50 | | 69 00 | 〃 | 5347 | 48 | 4893 | 15 | −1 | 4907 | | − 4709 |
| 〃 | 〃 | 15 53 | | | 426 | 820 | 〃 | 750 | 15 | −1 | 764 | | |
| | | | 0 15 | | | | | | | | | 771 | |
| 120 | 5059 | 16 08 | | 69 15 | 〃 | 1662 | 48 | 1521 | 15 | −1 | 1535 | | − 3938 |
| | | | 0 14 | | | | | | | | | 1540 | |
| 121 | 5061 | 16 22 | | 69 26 | 〃 | 3351 | 34 | 3066 | 10 | −1 | 3075 | | − 2398 |
| ... | .... | .. .. | . .. | .. .. | ... | .... | .. | .... | .. | .. | .... | .... | .... |

Table IV. Connection of Measurements on Two Consecutive Days.

| Station No. | Bench Mark No. | Time 1951 | $\delta T$ | $\sum\delta T$ | $LD$ | $SD$ | $h$ (cm) | 0.9150 × $SD$ (0.01 mgal) | 0.3086 × $h$ (〃) | $E.T.$ (〃) | Sum of Left Three (〃) | $\delta g$ (〃) | $\sum\delta g$ (〃) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ... | .... | .. .. | . .. | .. .. | ... | .... | .. | .... | .. | .. | .... | .... | .... |
| | | IV 15 | | | | | | | | | | | |
| | | h m | h m | h m | | | | | | | | | |
| 106 | 5031 | 14 48 | | 56 42 | 410 | 4089 | 21 | 3741 | 6 | 1 | 3748 | | −8211 |
| | | | 0 24 | | | | | | | | | 432 | |
| 107 | 5033 | 15 12 | | 57 06 | 〃 | 4549 | 54 | 4162 | 17 | 1 | 4180 | | −7779 |
| | | | 4 38 | | | | | | | | | −627 | |
| Ôtaguchi | | 19 50 | | 61 44 | 〃 | 3866 | 27 | 3537 | 8 | 8 | 3553 | | −8406 |
| | | IV 16 | | | | | | | | | | | |
| 〃 | | 8 13 | | | 〃 | 3913 | 27 | 3580 | 8 | −1 | 3587 | | |
| | | | 0 54 | | | | | | | | | 646 | |
| 107 | 5033 | 9 7 | | 62 38 | 〃 | 4610 | 53 | 4218 | 16 | −1 | 4233 | | −7760 |
| | | | 0 30 | | | | | | | | | 393 | |
| 108 | 5036 | 9 37 | | 63 08 | 〃 | 5045 | 37 | 4616 | 11 | −1 | 4626 | | −7367 |
| ... | .... | .. .. | . .. | .. .. | ... | .... | .. | .... | .. | .. | .... | ... | .... |

Table V. Bulk Closing Residual for the Three Loops in Shikoku.

| Loop | Closing Residuals (mgal) | Total Time (hour) | Average Rate of Flow (mgal/hour) |
|---|---|---|---|
| I | 7.04 | 197.0 | 0.0357 |
| II | 6.30 | 150.7 | 0.0418 |
| III | 6.01 | 144.1 | 0.0417 |

tially important. As shown before in Fig. 2, the routes of our measurements in Shikoku can be regarded as consisting of three partially overlapping loops : the east loop I, the middle loop II and the west loop III. The bulk closing residuals (including both running and lodging states) for each of the loops are given in Table V. The average rate of flow has been obtained merely by dividing the residual for a loop by the time needed to complete that loop. The total flow, however, may be regarded to consist of two parts. The one is the flow during the lodging where the gravimeter is placed quietly and the other is that during transportations where the gravimeter is shaken in a car. If the bulk closing residuals given above in Table V are grouped into these two parts and the average flows are calculated separately for each, we get the values shown in Table VI.

Table VI. Rates of Flow of the Gravimeter Spring for Lodging and Running Conditions.

| Loop | Lodging | | | Running | | |
|---|---|---|---|---|---|---|
| | Residual (mgal) | Time (hour) | Average Rate (mgal/hour) | Residual (mgal) | Time (hour) | Average Rate (mgal/hour) |
| I | 4.54 | 125.3 | 0.0362 | 2.50 | 71.7 | 0.0349 |
| II | 2.62 | 78.3 | 0.0335 | 3.68 | 72.4 | 0.0509 |
| III | 2.86 | 75.9 | 0.0377 | 3.15 | 68.2 | 0.0462 |

Except for the average rate of flow during running for Loop I, the average rates of flow during lodging and running are approximately constant respectively and the former is smaller than the latter. It is not yet clear, however, whether this difference is due to the difference in the mechanical conditions to which the gravimeter is subjected or to the difference in temperature of the instrument, for the temperature is generally low in the night-time when we are lodging.

## 7. Method of Calculations

Actual calculations of the gravity values at the bench marks have

been made in the following way.

Route 1. As was shown in Fig. 2, this route starts from Zentsûji (Z) and describes a loop via Tomida (Tm), Tokushima (Tk), Mugi (Mg), Muroto (Mr), Kôchi (Kc), and Ôtaguchi (Ot) which are lodging places. The running closing residual for this loop was 2.50 mgal while the working time needed to complete this loop was 71.7 hours. The average running flow is therefore

$$R=2.50\div 71.7=0.0349 \text{ mgal/hour.}$$

The value of $dg\equiv\sum\delta g$ at each of the bench marks on this route is given a correction $R\sum\delta T$, where $\sum\delta T$ is the time needed from Zentsûji to arrive at that bench mark. In this way, the gravity values (relative to Zentsûji) at all the stations along this Route 1 have been determined.

Route 2. The route, starting from B.M. 3385 and ending at B.M. 5002 via Zentsûji (Z), Kawanoe (Kw), Imabari (I), Matsuyama (Mt), and Kume (Km), is taken as Route 2. According to the final result of measurements along Route 1, we know that

$$dg(3385)=4.70 \text{ mgal}$$

and

$$dg(5002)=-54.49 \text{ mgal.}$$

On the other hand, the results of measurements along Route 2 gave

$$dg(5002)=-51.45 \text{ mgal}$$

assuming

$$dg(3385)=4.70 \text{ mgal.}$$

There is therefore a difference

$$-51.45+54.49=3.04 \text{ mgal}$$

for the value of $dg(5002)$ as determined from the measurements along Routes 1 and 2. The time needed for the measurements from B.M. 3385 to B.M. 5002 along Route 2 was 53.9 hours, so that the average rate of flow for Route 2 is

$$R=3.04\div 53.9=0.0564 \text{ mgal/hour.}$$

As was done for the stations along Route 1, the value of measurement at each bench mark on Route 2 is given a correction $R\sum\delta T$, where $\sum\delta T$ is the working time needed to arrive at that bench mark from B.M. 3385.

Route 3. Route 3, which starts from B.M. 5002 and ends at B.M. 3842 via Kubokawa (Kb), Sukumo (S), Uwajima (U) and Ôzu (O) gave

$$dg(3842)=-77.94 \text{ mgal,}$$

with $$dg(5002) = -54.49 \text{ mgal.}$$

On the other hand, the final results for Route 2 gave

$$dg(3842) = -80.18 \text{ mgal,}$$

so that the flow for Route 3 is

$$-77.94 + 80.18 = 2.24 \text{ mgal,}$$

and the time is 49.9 hours. The average rate of flow for Route 3 is therefore

$$R = 2.24 \div 49.9 = 0.0449 \text{ mgal/hour.}$$

All the values at the bench marks on this route were corrected in the same manner as described above for Route 1 and Route 2.

There are of course other methods of adjustment. For instance, the method of least squares is usually resorted to, if the routes along which the gravity values are measured have several points in common. This and other methods of reduction have been tried but in our present case, no significant difference has been shown by the difference in the methods.

Lastly it must be noticed that by the preceding processes, we have only determined the gravity differences at all the bench marks in Shikoku from the value at Zentsûji which was conveniently taken as the reference station. In order to get the gravity value at each of the stations, the value at one of the stations on the routes must be known. Now by a direct connection to Honshû (the Main Island of Japan), the value at B.M. 5066 on the first route has been found to be 979.67653. That the difference

$$g(\text{Zentsûji}) - g(5066)$$

is 14.60 mgal is already known. Thus the value at Zentsûji becomes

$$979.67653 + 14.60 = 979.69113$$

In saying that the value at B.M. 5066 is 979.67653, the value at the Tokyo Base Station has been taken exactly to be 979.80100, This value was determined in 1899 by H. NAGAOKA relative to Potsdam. Obviously NAGAOKA's determination has no sufficient accuracy to give the gravity value down to one hundredth of a milligal. It is merely for the sake of convenience that the value has been taken exactly as 979.80100.

## 8. Results

The bench marks at which the gravity values have been measured on this island are 276 in number. The number in each of four prefect-

ures is given in Table VII.

Table VII. Number of Gravimeter Stations in Four Prefectures in Shikoku.

| | |
|---|---|
| Tokushima Prefecture | 55 |
| Kagawa Prefecture | 33 |
| Ehime Prefecture | 96 |
| Kôchi Prefecture | 92 |
| Total | 276 |

In addition, a few meteorological and tidal observatories have been visited. These are 9 in number and thus make the total 285. The measurements were made mainly in April, 1951, partly in August, 1952, and in April, 1953.

The gravity values and anomalies at the stations in Shikoku are given in Table VIII—XIV which are self-explanatory. Tables VIII—XI correspond to Routes 1, 2, 3 and $16_1$ respectively, while Tables XII—XV give the results for four prefectures separately. In calculating the gravity anomalies, the free air reduction was made by the formula

$$0.308600 \times h \text{ (m)}.$$

That the coefficient 0.3086 necessarily varies according to gravity anomalies has been discussed by C. TSUBOI (1952), but no consideration for this effect has been paid here. The BOUGUER reductions were made by taking the density of the rock to be exactly 2.6700. Again, the normal gravity was calculated according to

$$\gamma = 979.03000(1 + 0.00530200 \sin^2 \varphi - 0.00000700 \sin^2 2\varphi).$$

Since the latitudes of gravity stations, which were read from maps of the scale 1/50,000, are accurate to 0′.1 at most, the normal gravity values at the stations cannot be calculated beyond 0.1 mgal. Neither the reduction nor the normal gravity having an accuracy greater than 0.1 mgal, the calculated gravity anomalies are to be regarded as correct to 0.1 mgal at most. But the gravity value at the very site of a bench mark is relatively accurate within a few hundredths of a milligal. The fact that at a certain bench mark, the gravity value as referred to that at Zentsûji was such and such at such and such a time should be kept on record. This is important especially because we have in mind the possibility of redetermination in order to attack the important problem whether there can be secular variations in gravity or not.

The lines of equal BOUGUER anomalies with 5 mgal intervals are

shown in Fig. 8. The positions of the lines are accurate where they meet the lines of precise levels, but obviously no great accuracy can be claimed for their positions and trends in the intervenient parts. The followings are some of the more interesting features which are noticed in Fig. 8, although the full discussions of these and others are reserved to a future study.

1. The BOUGUER anomaly increases considerably towards the south, that is towards the Pacific side of the island. The positive anomaly of as large as about 100 mgal is found at Muroto Point.

2. The isoanomaly contour lines have the general trends from WSW to ENE which perfectly agree with those of the tectonic structure of the island.

3. Along the Median Dislocation Line, which is a tectonic line running about the middle of island in the said direction and dividing it into the Inner and Outer Zones, the BOUGUER anomalies are relatively minimum. This belt of minimum is narrow and sharp in the eastern part but becomes wider towards the west.

4. There is an area with conspicuous negative anomalies near the city of Matsuyama (Mt). This area is likely to extend still farther towards the north across the Seto Inland Sea and reach the Chûgoku District. This distribution suggests a conspicuous depression of the earth's crust.

5. There is an area with conspicuous positive anomalies towards the north of Kagawa Prefecture. This may be taken as indicating the existence there of a dense mass beneath the ground. Geological evidences are in accord with this indication, for it is just in this area that basaltic (sanukitic) rock bodies (erosion relics) are sporadically distributed, which must have been fed from a large hidden source of basaltic magma.

## 9. Acknowledgements

We cannot close our present report without gratefully expressing our deep appreciations for the supports and assistances which were offered to us during this work by a number of offices, institutes, local authorities as well as individuals in various ways. The names of these are too numerous to be mentioned here. But particularly, we wish to thank Mrs. S. INOUE and Miss K. SEKI who have helped us greatly in numerical computations. A part of the expense necessary for this survey was defrayed from the Grant in Aid of Scientific Research from the Ministry of Education.

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Table VIII. Results along Route 1. (0.01 mgal)

Route 1. Zentsûji—Tomida—Tokushima—Mugi—Muroto—Kôchi—Ôtaguchi—Zentsûji

| Pref. | No. | B.M. | Date 1951 | Time | $\sum\delta T$ | $LD$ | $SD$ | 0.9150 × $SD$ | $h$ (cm) | 0.3086 × $h$ | $E.T.$ | 3.49 × $\sum\delta T$ Flow | $\sum\delta g$ | $g$ 979. | Field Note No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h m | h m | | | | | | | | | | |
| 36 | Zentsûji | | IV 8 | 7 59 | 0 00 | 430 | 3485 | 3189 | 27 | 8 | − 5 | 0 | 0 | 69113 | 2 |
| 〃 | 1 | J. 3385 | 〃 | 9 07 | 1 08 | 〃 | 3996 | 3656 | 34 | 10 | 0 | 4 | 470 | 69583 | 〃 |
| 〃 | 2 | 3383 | 〃 | 9 25 | 1 26 | 〃 | 5141 | 4704 | 45 | 14 | 0 | 5 | 1521 | 70634 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 9 32 | | 436 | 2470 | 2260 | 〃 | 〃 | 6 | | | | 〃 |
| 〃 | 3 | 3381 | 〃 | 9 56 | 1 50 | 〃 | 2754 | 2520 | 34 | 10 | 6 | 6 | 1776 | 70889 | 〃 |
| 〃 | 4 | J. 354 | 〃 | 10 17 | 2 11 | 〃 | 2943 | 2693 | 41 | 13 | 6 | 8 | 1950 | 71063 | 〃 |
| 〃 | 5 | 353 | 〃 | 10 34 | 2 28 | 〃 | 3059 | 2799 | 49 | 15 | 10 | 9 | 2061 | 71174 | 〃 |
| 〃 | 6 | 351 | 〃 | 10 58 | 2 52 | 〃 | 2524 | 2309 | 34 | 10 | 10 | 10 | 1565 | 70678 | 〃 |
| 〃 | 7 | 349 | 〃 | 11 24 | 3 18 | 〃 | 2084 | 1907 | 46 | 14 | 10 | 12 | 1165 | 70278 | 〃 |
| 〃 | 8 | 347 | 〃 | 12 05 | 3 59 | 〃 | 3054 | 2794 | 47 | 15 | 13 | 14 | 2054 | 71167 | 〃 |
| 〃 | 9 | 345 | 〃 | 12 32 | 4 26 | 〃 | 4014 | 3673 | 46 | 14 | 14 | 15 | 2932 | 72045 | 〃 |
| 〃 | 10 | 343 | 〃 | 13 57 | 5 51 | 〃 | 3665 | 3353 | 53 | 16 | 12 | 21 | 2606 | 71719 | 〃 |
| 〃 | 11 | Takamatsu W.S.* | 〃 | 14 19 | 6 13 | 〃 | 2763 | 2528 | 58 | 18 | 12 | 22 | 1782 | 70895 | 〃 |
| 〃 | 12 | 341 | 〃 | 14 37 | 6 31 | 〃 | 2865 | 2621 | 37 | 11 | 8 | 23 | 1863 | 70976 | 〃 |
| 〃 | 13 | 339 | 〃 | 15 05 | 6 59 | 〃 | 2050 | 1876 | 52 | 16 | 8 | 24 | 1122 | 70235 | 〃 |
| 〃 | 14 | 337 | 〃 | 15 38 | 7 32 | 〃 | 1714 | 1568 | 53 | 16 | 2 | 26 | 806 | 69919 | 〃 |
| 〃 | 15 | 335 | 〃 | 15 47 | 7 41 | 〃 | 1355 | 1240 | 40 | 12 | 2 | 27 | 473 | 69586 | 〃 |
| 〃 | 16 | 333 | 〃 | 16 11 | 8 05 | 〃 | 1604 | 1468 | 54 | 17 | 2 | 28 | 705 | 69818 | 〃 |
| 〃 | 17 | 331 | 〃 | 16 25 | 8 19 | 〃 | 0743 | 0680 | 46 | 14 | 2 | 29 | − 87 | 69026 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 16 40 | | 431 | 2987 | 2733 | 〃 | 〃 | − 3 | | | | 〃 |
| 〃 | 18 | 330 | 〃 | 16 55 | 8 34 | 〃 | 1355 | 1240 | 41 | 13 | − 3 | 30 | −1582 | 67531 | 〃 |
| 〃 | Tomida | | 〃 | 18 13 | | 432 | 3432 | 3140 | 27 | 8 | − 7 | | | | 〃 |
| 〃 | 〃 | | IV 9 | 8 30 | | 〃 | 3482 | 3186 | 〃 | 〃 | − 2 | | | | 〃 |
| 〃 | 16 | 333 | 〃 | 9 27 | 8 05 | 436 | 1700 | 1556 | 52 | 16 | − 2 | 28 | 705 | 69818 | 〃 |
| 〃 | 17 | 331 | 〃 | 9 45 | 8 23 | 〃 | 0843 | 0771 | 44 | 14 | 3 | 29 | − 78 | 69035 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 9 53 | | 423 | 6650 | 6085 | 〃 | 〃 | 3 | | | | 〃 |
| 〃 | 18 | 330 | 〃 | 10 08 | 8 38 | 〃 | 5017 | 4591 | 45 | 14 | 3 | 30 | −1573 | 67540 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 10 13 | | 419 | 6791 | 6214 | 〃 | 〃 | 3 | | | | 〃 |
| 〃 | 19 | 327 | 〃 | 11 20 | 9 45 | 〃 | 1832 | 1676 | 39 | 12 | 8 | 34 | −6112 | 63001 | 〃 |
| 35 | 20 | 326 | 〃 | 11 50 | 10 15 | 〃 | 2735 | 2503 | 43 | 13 | 12 | 36 | −5282 | 63831 | 〃 |

* Weather Station Seismometer Room.

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 〃 | 21 | 324 | 〃 | 12 10 | 10 35 | 〃 | 2975 | 2722 | 45 | 14 | 12 | 37 | −5063 | 64050 | 〃 |
| 〃 | 22 | 322 | 〃 | 12 30 | 10 55 | 〃 | 4705 | 4305 | 30 | 9 | 14 | 38 | −3484 | 65629 | 3 |
| 〃 | 23 | 320 | 〃 | 12 50 | 11 15 | 〃 | 5259 | 4812 | 52 | 16 | 14 | 39 | −2971 | 66142 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 12 56 | | 427 | 1712 | 1566 | 〃 | 〃 | 14 | | | | 〃 |
| 〃 | 24 | 318 | 〃 | 14 27 | 12 46 | 〃 | 2640 | 2416 | 39 | 12 | 13 | 45 | −2132 | 66981 | 〃 |
| 〃 | 25 | 316 | 〃 | 14 43 | 13 02 | 〃 | 2740 | 2507 | 41 | 13 | 11 | 45 | −2042 | 67071 | 〃 |
| 〃 | 26 | 314 | 〃 | 14 56 | 13 15 | 〃 | 2358 | 2158 | 39 | 12 | 11 | 46 | −2393 | 66720 | 〃 |
| 〃 | 27 | 312 | 〃 | 15 12 | 13 31 | 〃 | 2419 | 2213 | 46 | 14 | 11 | 47 | −2337 | 66776 | 〃 |
| 〃 | 28 | 310 | 〃 | 15 26 | 13 45 | 〃 | 2873 | 2629 | 41 | 13 | 11 | 48 | −1923 | 67190 | 〃 |
| 〃 | 29 | 308 | 〃 | 15 48 | 14 07 | 〃 | 3222 | 2948 | 50 | 15 | 7 | 49 | −1607 | 67506 | 〃 |
| 〃 | 30 | 306 | 〃 | 16 20 | 14 39 | 〃 | 3060 | 2800 | 32 | 10 | 7 | 51 | −1762 | 67351 | 〃 |
| 〃 | 31 | J. 5066 | 〃 | 16 36 | 14 55 | 〃 | 3392 | 3104 | 46 | 14 | 2 | 52 | −1460 | 67653 | 〃 |
| 〃 | 32 | 5068 | 〃 | 17 07 | 15 26 | 〃 | 2916 | 2668 | 48 | 15 | 2 | 54 | −1897 | 67216 | 〃 |
| 〃 | 33 | 5070 | 〃 | 17 40 | 15 59 | 〃 | 3138 | 2871 | 40 | 12 | − 3 | 56 | −1704 | 67409 | 〃 |
| 〃 | 34 | 5072 | 〃 | 18 22 | 16 41 | 〃 | 3769 | 3449 | 58 | 18 | − 3 | 58 | −1122 | 67991 | 〃 |
| 〃 | 35 | 5074 | 〃 | 18 41 | 17 00 | 〃 | 3862 | 3534 | 46 | 14 | − 6 | 59 | −1045 | 68068 | 〃 |
| 〃 | Tokushima | | 〃 | 19 07 | 17 26 | 〃 | 3609 | 3302 | 27 | 8 | − 6 | 61 | −1285 | 67828 | 〃 |
| 〃 | 〃 | IV 10 | | 8 48 | | 〃 | 3624 | 3316 | 〃 | 〃 | − 4 | | | | 〃 |
| 〃 | 36 | Tokushima W.S.* | 〃 | 9 14 | 17 52 | 〃 | 3326 | 3043 | 58 | 18 | − 4 | 62 | −1549 | 67564 | 〃 |
| 〃 | 34 | 5072 | 〃 | 10 18 | 18 56 | 〃 | 3791 | 3469 | 54 | 17 | 0 | 66 | −1124 | 67989 | 〃 |
| 〃 | 35 | 5074 | 〃 | 10 35 | 19 13 | 〃 | 3875 | 3546 | 58 | 18 | 5 | 67 | −1042 | 68071 | 〃 |
| 〃 | 37 | 5077 | 〃 | 11 11 | 19 49 | 〃 | 4479 | 4098 | 41 | 13 | 5 | 69 | − 497 | 68616 | 〃 |
| 〃 | 38 | 5079 | 〃 | 11 43 | 20 21 | 〃 | 3315 | 3033 | − 1 | 0 | 9 | 71 | −1573 | 67540 | 〃 |
| 〃 | 39 | 5081 | 〃 | 12 04 | 20 42 | 〃 | 2404 | 2200 | 44 | 14 | 9 | 72 | −2393 | 66720 | 〃 |
| 〃 | 40 | 5082 | 〃 | 12 15 | 20 53 | 〃 | 2299 | 2104 | 55 | 17 | 9 | 73 | −2487 | 66626 | 〃 |
| 〃 | 41 | 5084 | 〃 | 12 52 | 21 30 | 〃 | 1737 | 1589 | 52 | 16 | 12 | 75 | −3002 | 66111 | 〃 |
| 〃 | 42 | 5086 | 〃 | 13 12 | 21 50 | 〃 | 1488 | 1362 | 46 | 14 | 12 | 76 | −3232 | 65881 | 〃 |
| 〃 | 43 | 5088 | 〃 | 13 33 | 22 11 | 〃 | 0988 | 0913 | 32 | 10 | 13 | 77 | −3685 | 65428 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 13 40 | | 418 | 5023 | 4596 | 〃 | 〃 | 13 | | | | 〃 |
| 〃 | 44 | 5090 | 〃 | 14 00 | 22 31 | 〃 | 5428 | 4967 | 55 | 17 | 13 | 78 | −3308 | 65805 | 〃 |
| 〃 | 45 | 5092 | 〃 | 14 22 | 22 53 | 〃 | 4072 | 3726 | 51 | 16 | 13 | 80 | −4552 | 64561 | 〃 |
| 〃 | 46 | 5095 | 〃 | 14 53 | 23 24 | 〃 | 5554 | 5082 | 49 | 15 | 12 | 82 | −3200 | 65913 | 〃 |
| 〃 | 47 | 5098 | 〃 | 15 30 | 24 01 | 〃 | 5840 | 5344 | 34 | 10 | 9 | 84 | −2948 | 66165 | 〃 |
| 〃 | 48 | 5100 | 〃 | 16 33 | 25 04 | 〃 | 5961 | 5454 | 50 | 15 | 6 | 88 | −2840 | 66273 | 〃 |
| 〃 | 49 | 5102 | 〃 | 16 55 | 25 26 | 〃 | 5286 | 4837 | 48 | 15 | 6 | 89 | −3458 | 65655 | 〃 |
| 〃 | 50 | 5104 | 〃 | 17 50 | 26 21 | 〃 | 4591 | 4201 | 55 | 17 | 1 | 92 | −4100 | 65013 | 〃 |
| 〃 | 51 | 5106 | 〃 | 18 08 | 26 39 | 〃 | 5025 | 4598 | 53 | 16 | 1 | 93 | −3705 | 65408 | 〃 |
| 〃 | 52 | 5108 | 〃 | 18 27 | 26 58 | 〃 | 6482 | 5931 | 45 | 14 | 1 | 94 | −2375 | 66738 | 〃 |
| 〃 | 53 | 5109 | 〃 | 18 50 | 27 21 | 〃 | 6598 | 6037 | 48 | 15 | − 2 | 96 | −2273 | 66840 | 〃 |
| 〃 | Mugi | | 〃 | 20 00 | 28 31 | 〃 | 6723 | 6152 | 27 | 8 | − 5 | 99 | −2171 | 66942 | 〃 |

* Weather Station Seismometer Room.

Table VIII. (Continued)

| Pref. | No. | B.M. | Date 1951 | Time | $\sum\delta T$ | $LD$ | $SD$ | 0.9150 × $SD$ | $h$ (cm) | 0.3086 × $h$ | $E.T.$ | 3.49 × $\sum\delta T$ Flow | $\sum\delta g$ | $g$ 979. | Field Note No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h m | | | | | | | | | | | |
| 35 | Mugi | | IV 11 | 10 30 | | 418 | 6775 | 6199 | 27 | 8 | 1 | | | | 3 |
| 〃 | 〃 | | 〃 | 10 38 | | 429 | 1880 | 1720 | 〃 | 〃 | 1 | | | | 〃 |
| 〃 | 〃 | | IV 12 | 8 40 | h m | 〃 | 1999 | 1829 | 〃 | 〃 | − 5 | | | | 〃 |
| 〃 | 53 | 5109 | 〃 | 9 00 | 28 51 | 〃 | 1891 | 1730 | 43 | 13 | − 5 | 101 | −2267 | 66846 | 〃 |
| 〃 | 54 | 5110 | 〃 | 10 30 | 30 21 | 〃 | 2050 | 1876 | 42 | 13 | 2 | 106 | −2119 | 66994 | 〃 |
| 〃 | 55 | 5113 | 〃 | 10 55 | 30 46 | 〃 | 2195 | 2008 | 51 | 16 | 2 | 107 | −1985 | 67128 | 〃 |
| 〃 | 56 | 5115 | 〃 | 11 20 | 31 11 | 〃 | 1863 | 1705 | 61 | 19 | 2 | 109 | −2287 | 66826 | 〃 |
| 〃 | 57 | 5116 | 〃 | 11 47 | 31 38 | 〃 | 1504 | 1376 | 46 | 14 | 6 | 110 | −2618 | 66495 | 〃 |
| 〃 | 58 | 5119 | 〃 | 12 15 | 32 06 | 〃 | 1904 | 1742 | 53 | 16 | 6 | 112 | −2252 | 66861 | 〃 |
| 38 | 59 | 5121 | 〃 | 13 41 | 33 32 | 〃 | 1935 | 1771 | 44 | 14 | 11 | 117 | −2225 | 66888 | 〃 |
| 〃 | 60 | 5123 | 〃 | 14 00 | 33 51 | 〃 | 1902 | 1740 | 22 | 7 | 11 | 118 | −2264 | 66849 | 〃 |
| 〃 | 61 | 5125 | 〃 | 14 25 | 34 16 | 〃 | 1777 | 1626 | 22 | 7 | 11 | 120 | −2380 | 66733 | 〃 |
| 〃 | 62 | 5128 | 〃 | 14 52 | 34 43 | 〃 | 2123 | 1943 | 23 | 7 | 12 | 121 | −2063 | 67050 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 15 17 | | 〃 | 2110 | 1931 | 〃 | 〃 | 12 | | | | 〃 |
| 〃 | 63 | 5131 | 〃 | 15 40 | 35 06 | 〃 | 2714 | 2483 | 34 | 10 | 11 | 122 | −1510 | 67603 | 〃 |
| 〃 | 64 | 5133 | 〃 | 16 13 | 35 39 | 〃 | 2395 | 2191 | 39 | 12 | 11 | 124 | −1802 | 67311 | 〃 |
| 〃 | 65 | 5135 | 〃 | 16 35 | 36 01 | 〃 | 2564 | 2346 | 34 | 10 | 9 | 126 | −1653 | 67460 | 〃 |
| 〃 | 66 | 5137 | 〃 | 16 57 | 36 23 | 〃 | 2635 | 2411 | 23 | 7 | 9 | 127 | −1592 | 67521 | 〃 |
| 〃 | 67 | 5138 | 〃 | 17 10 | 36 56 | 〃 | 3005 | 2750 | 20 | 6 | 9 | 128 | −1255 | 67858 | 〃 |
| 〃 | 68 | F. 46 | 〃 | 17 30 | 36 56 | 〃 | 3253 | 2976 | 38 | 12 | 8 | 129 | −1025 | 68088 | 〃 |
| 〃 | 69 | 5142 | 〃 | 18 04 | 37 30 | 〃 | 3220 | 2946 | 46 | 14 | 8 | 131 | −1054 | 68059 | 〃 |
| 〃 | 69 R | | 〃 | 18 25 | 37 51 | 〃 | 1570 | 1437 | | | 8 | 132 | −2579 | 66534 | 〃 |
| 〃 | 〃 | | 〃 | 18 27 | | 418 | 6473 | 5923 | | | 8 | | | | 〃 |
| 〃 | 71 | △ | 〃 | 18 44 | 38 08 | 〃 | 3792 | 3470 | 30 | 9 | 5 | 133 | −5027 | 64086 | 〃 |
| 〃 | 70 | Muroto W.S.* | 〃 | 18 54 | 38 18 | 〃 | 3757 | 3438 | 57 | 18 | 5 | 134 | −5051 | 64062 | 〃 |
| 〃 | 70 R | | 〃 | | | 〃 | 6491 | 5939 | | | 3 | | | | 〃 |
| 〃 | 〃 | | 〃 | | | 429 | 1615 | 1478 | | | 3 | | | | 〃 |
| 〃 | 72 | 5144 | 〃 | 20 12 | 39 36 | 〃 | 3376 | 3089 | 41 | 13 | 3 | 138 | − 950 | 68163 | 〃 |
| 〃 | Muroto | | 〃 | 20 38 | 40 02 | 〃 | 3224 | 2950 | 27 | 8 | 0 | 139 | −1098 | 68015 | 4a |
| 〃 | 〃 | | IV 13 | 8 30 | | 〃 | 3272 | 2994 | 〃 | 〃 | − 4 | | | | 〃 |
| 〃 | 73 | M. 1 | 〃 | 8 52 | 40 24 | 〃 | 3088 | 2826 | 40 | 12 | − 4 | 141 | −1264 | 67849 | 〃 |
| 〃 | 72 | 5144 | 〃 | 9 11 | 40 43 | 〃 | 3367 | 3081 | 45 | 14 | − 4 | 142 | −1008 | 68105 | 〃 |
| 〃 | 74 | 5146 | 〃 | 9 30 | 41 02 | 〃 | 3024 | 2767 | 54 | 17 | − 3 | 143 | −1319 | 67794 | 〃 |
| 〃 | 75 | 5148 | 〃 | 9 54 | 41 26 | 〃 | 2678 | 2450 | 49 | 15 | − 3 | 144 | −1639 | 67474 | 〃 |
| 〃 | 76 | 5150 | 〃 | 10 15 | 41 47 | 〃 | 2441 | 2234 | 58 | 18 | − 3 | 146 | −1854 | 67259 | 〃 |

* Weather Station Seismometer Room.

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 〃 | 77 | | 5152 | 〃 | 10 40 | 42 12 | 〃 | 2035 | 1862 | 44 | 14 | − 1 | 147 | −2229 | 66884 | 〃 |
| 〃 | 78 | | 5154 | 〃 | 11 03 | 42 35 | 〃 | 1602 | 1466 | 53 | 16 | − 1 | 149 | −2625 | 66488 | 〃 |
| 〃 | 〃 | | 〃 | 〃 | 11 07 | | 420 | 5624 | 5146 | 〃 | 〃 | − 1 | | | | 〃 |
| 〃 | 79 | | 5156 | 〃 | 11 27 | 42 55 | 〃 | 5283 | 4834 | 22 | 7 | − 1 | 150 | −2947 | 66166 | 〃 |
| 〃 | 80 | | 5158 | 〃 | 11 47 | 43 15 | 〃 | 4882 | 4467 | 74 | 23 | 2 | 151 | −3296 | 65817 | 〃 |
| 〃 | 81 | | 5160 | 〃 | 12 18 | 43 46 | 〃 | 4863 | 4450 | 33 | 10 | 2 | 153 | −3328 | 65785 | 〃 |
| 〃 | 82 | | 5162 | 〃 | 13 50 | 45 18 | 〃 | 4854 | 4441 | 44 | 14 | 8 | 158 | −3332 | 65781 | 〃 |
| 〃 | 83 | | 5164 | 〃 | 14 26 | 45 54 | 〃 | 3896 | 3565 | 28 | 9 | 7 | 160 | −4216 | 64897 | 〃 |
| 〃 | 84 | | 5166 | 〃 | 14 40 | 46 08 | 〃 | 4238 | 3878 | 15 | 5 | 9 | 161 | −3906 | 65207 | 〃 |
| 〃 | 85 | | 5168 | 〃 | 14 55 | 46 23 | 〃 | 3814 | 3490 | 33 | 10 | 9 | 162 | −4290 | 64823 | 〃 |
| 〃 | 86 | | 5172 | 〃 | 15 21 | 46 49 | 〃 | 3296 | 3016 | 61 | 19 | 9 | 163 | −4756 | 64357 | 〃 |
| 〃 | 87 | | 5174 | 〃 | 15 42 | 47 10 | 〃 | 3369 | 3083 | 42 | 13 | 10 | 165 | −4696 | 64417 | 〃 |
| 〃 | 88 | | 5176 | 〃 | 16 00 | 47 28 | 〃 | 2753 | 2519 | 36 | 11 | 10 | 166 | −5263 | 63850 | 〃 |
| 〃 | 89 | | 5178 | 〃 | 16 20 | 47 48 | 〃 | 2526 | 2311 | 90 | 28 | 10 | 167 | −5455 | 63658 | 〃 |
| 〃 | 90 | Kôchi | W.S.* | 〃 | 17 19 | 48 47 | 〃 | 2763 | 2528 | 59 | 18 | 9 | 170 | −5252 | 63861 | 〃 |
| 〃 | 91 | | 5002 | 〃 | 17 43 | 49 11 | 〃 | 2552 | 2335 | 56 | 17 | 8 | 172 | −5449 | 63664 | 〃 |
| 〃 | Kôchi | | | 〃 | 19 07 | 50 35 | 〃 | 2474 | 2264 | 27 | 8 | 5 | 176 | −5536 | 63577 | 〃 |
| 〃 | 〃 | | | IV 15 | 7 40 | | 〃 | 2646 | 2421 | 〃 | 〃 | − 2 | | | | 〃 |
| 〃 | 91 | | 5002 | 〃 | 8 41 | 51 36 | 〃 | 2737 | 2504 | 53 | 16 | − 2 | 180 | −5449 | 63664 | 〃 |
| 〃 | 92 | | J. 5004 | 〃 | 9 00 | 51 55 | 〃 | 3202 | 2930 | 37 | 11 | − 2 | 181 | −5029 | 64084 | 〃 |
| 〃 | 93 | | 5006 | 〃 | 9 17 | 52 12 | 〃 | 3393 | 3105 | 35 | 11 | − 2 | 182 | −4855 | 64258 | 〃 |
| 〃 | 94 | | 5008 | 〃 | 9 35 | 52 30 | 〃 | 3239 | 2964 | 34 | 10 | − 2 | 183 | −4998 | 64115 | 〃 |
| 〃 | 〃 | | 〃 | 〃 | 9 37 | | 414 | 5952 | 5446 | 〃 | 〃 | − 2 | | | | 〃 |
| 〃 | 95 | | 5010 | 〃 | 10 02 | 52 55 | 〃 | 3950 | 3614 | 33 | 10 | − 2 | 184 | −6831 | 62282 | 〃 |
| 〃 | 〃 | | 〃 | 〃 | 10 05 | | 409 | 6216 | 5688 | 〃 | 〃 | − 2 | | | | 〃 |
| 〃 | 96 | | 5012 | 〃 | 10 25 | 53 15 | 〃 | 3211 | 2938 | 24 | 7 | − 2 | 186 | −9586 | 59527 | 〃 |
| 〃 | 〃 | | 〃 | 〃 | 10 27 | | 402 | 6326 | 5788 | 〃 | 〃 | − 2 | | | | 〃 |
| 〃 | 97 | | 5013 | 〃 | 10 40 | 53 28 | 〃 | 4191 | 3835 | 44 | 14 | − 2 | 187 | −11533 | 57580 | 〃 |
| 〃 | 98 | | 5015 | 〃 | 11 02 | 53 50 | 〃 | 4877 | 4462 | 48 | 15 | − 2 | 188 | −10906 | 58207 | 〃 |
| 〃 | 99 | | 5017 | 〃 | 11 20 | 54 08 | 〃 | 5010 | 4584 | 32 | 10 | − 2 | 189 | −10790 | 58323 | 〃 |
| 〃 | 100 | | 5019 | 〃 | 11 51 | 53 47 | 〃 | 6085 | 5568 | 26 | 8 | − 2 | 188 | −9814 | 59299 | 〃 |
| 〃 | 99 | | 5017 | 〃 | 12 12 | 54 08 | 〃 | 5017 | 4591 | 32 | 10 | − 2 | 189 | −10790 | 58323 | 〃 |
| 〃 | 〃 | | 〃 | 〃 | 12 14 | | 410 | 1475 | 1350 | 〃 | 〃 | − 2 | | | | 〃 |
| 〃 | 101 | | 5021 | 〃 | 12 43 | 54 37 | 〃 | 4312 | 3945 | 50 | 15 | − 1 | 190 | −8190 | 60923 | 〃 |
| 〃 | 102 | | 5023 | 〃 | 13 31 | 55 25 | 〃 | 3679 | 3366 | 40 | 12 | 0 | 193 | −8774 | 60339 | 〃 |
| 〃 | 103 | | 5025 | 〃 | 13 50 | 55 44 | 〃 | 3893 | 3562 | 43 | 13 | 0 | 194 | −8578 | 60535 | 〃 |
| 〃 | 104 | | 5027 | 〃 | 14 07 | 56 01 | 〃 | 3264 | 2987 | 42 | 13 | 0 | 195 | −9154 | 59959 | 〃 |
| 〃 | 105 | | 5029 | 〃 | 14 37 | 56 31 | 〃 | 3520 | 3221 | 47 | 15 | 1 | 197 | −8919 | 60194 | 〃 |
| 35 | 106 | | 5031 | 〃 | 14 48 | 56 42 | 〃 | 4089 | 3741 | 21 | 6 | 1 | 198 | −8409 | 60704 | 〃 |
| 〃 | 107 | | 5033 | 〃 | 15 12 | 57 06 | 〃 | 4549 | 4162 | 54 | 17 | 1 | 199 | −7978 | 61135 | 〃 |

* Weather Station Seismometer Room.

Table VIII. (Continued)

| Pref. | No. | B.M. | Date 1951 | Time | $\sum\delta T$ | $LD$ | $SD$ | 0.9150 × $SD$ | $h$ (cm) | 0.3086 × $h$ | $E.T.$ | 3.49 × $\sum\delta T$ Flow | $\sum\delta g$ | $g$ 979. | Field Note No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h m | h m | | | | | | | | | | |
| 38 | Ôtaguchi | | IV 15 | 19 50 | 61 44 | 410 | 3866 | 3537 | 27 | 8 | 8 | 215 | −8621 | 60492 | 4a |
| 〃 | 〃 | | IV 16 | 8 13 | | 〃 | 3913 | 3580 | 〃 | 〃 | − 1 | | | | 〃 |
| 35 | 107 | 5033 | 〃 | 9 07 | 62 38 | 〃 | 4610 | 4218 | 53 | 16 | − 1 | 218 | −7978 | 61135 | 〃 |
| 〃 | 108 | 5036 | 〃 | 9 37 | 63 08 | 〃 | 5045 | 4616 | 37 | 11 | − 1 | 220 | −7587 | 61526 | 〃 |
| 〃 | 109 | 5038 | 〃 | 10 02 | 63 33 | 〃 | 6137 | 5615 | 31 | 10 | − 1 | 222 | −6591 | 62522 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 10 04 | | 414 | 4346 | 3977 | 〃 | 10 | − 1 | | | | 〃 |
| 〃 | 110 | 5040 | 〃 | 10 22 | 63 51 | 〃 | 5435 | 4973 | 39 | 12 | − 1 | 223 | −5594 | 63519 | 〃 |
| 〃 | 111 | 5042 | 〃 | 10 40 | 64 09 | 〃 | 6301 | 5765 | 43 | 13 | 0 | 224 | −4801 | 64312 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 10 44 | | 420 | 3593 | 3288 | 〃 | 13 | 0 | | | | 〃 |
| 〃 | 112 | 5043 | 〃 | 10 57 | 64 22 | 〃 | 4035 | 3692 | 33 | 10 | 0 | 225 | −4401 | 64712 | 〃 |
| 〃 | 113 | 5045 | 〃 | 11 12 | 64 37 | 〃 | 3619 | 3311 | 44 | 14 | 0 | 225 | −4778 | 64335 | 〃 |
| 〃 | 114 | 5047 | 〃 | 13 26 | 66 51 | 〃 | 5211 | 4768 | 47 | 15 | − 2 | 233 | −3330 | 65783 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 13 28 | | 416 | 7044 | 6445 | 〃 | 〃 | − 2 | | | | 〃 |
| 〃 | 114R | | 〃 | 13 47 | 67 10 | 〃 | 1757 | 1608 | | | − 3 | 234 | −8184 | 60929 | 〃 |
| 〃 | 〃 | | 〃 | 13 52 | | 406 | 6270 | 5737 | | | − 3 | | | | 〃 |
| 〃 | 115 | 5051 | 〃 | 14 12 | 67 30 | 〃 | 2978 | 2725 | 45 | 14 | − 3 | 235 | −11183 | 57930 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 14 14 | | 400 | 5637 | 5158 | 〃 | 〃 | − 3 | | | | 〃 |
| 〃 | 116 | 5052 | 〃 | 14 37 | 67 53 | 〃 | 3327 | 3044 | 50 | 15 | − 3 | 237 | −13298 | 55815 | 4b |
| 〃 | 〃 | 〃 | 〃 | 14 39 | | 404 | 1558 | 1426 | 〃 | 〃 | − 3 | | | | 〃 |
| 36 | 117 | 5054 | 〃 | 15 13 | 68 27 | 〃 | 4341 | 3972 | 46 | 14 | − 3 | 239 | −10755 | 58358 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 15 15 | | 410 | 1677 | 1534 | 〃 | 〃 | − 3 | | | | 〃 |
| 〃 | 118 | 5055 | 〃 | 15 30 | 68 42 | 〃 | 3699 | 3385 | 51 | 16 | − 1 | 240 | −8901 | 60212 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 15 32 | | 416 | 1027 | 0940 | 〃 | 〃 | − 1 | | | | 〃 |
| 〃 | 119 | 5057 | 〃 | 15 50 | 69 00 | 〃 | 5347 | 4893 | 48 | 15 | − 1 | 241 | −4950 | 64163 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 15 53 | | 426 | 0820 | 0750 | 〃 | 〃 | − 1 | | | | 〃 |
| 〃 | 120 | 5059 | 〃 | 16 08 | 69 15 | 〃 | 1662 | 1521 | 48 | 15 | − 1 | 242 | −4180 | 64933 | 〃 |
| 〃 | 121 | 5061 | 〃 | 16 22 | 69 29 | 〃 | 3351 | 3066 | 34 | 10 | − 1 | 242 | −2640 | 66473 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 16 26 | | 〃 | 3331 | 3048 | 〃 | 〃 | − 1 | | | | 〃 |
| 〃 | 122 | 5063 | 〃 | 16 41 | 69 44 | 〃 | 5213 | 4770 | 44 | 14 | 1 | 243 | − 913 | 68200 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 16 45 | | 430 | 3418 | 3127 | 〃 | 〃 | 1 | | | | 〃 |
| 〃 | 123 | 5065 | 〃 | 16 57 | 69 56 | 〃 | 4683 | 4285 | 47 | 15 | 1 | 244 | 245 | 69358 | 〃 |
| 〃 | 1 | J. 3385 | 〃 | 17 07 | 70 06 | 〃 | 4935 | 4516 | 29 | 9 | 1 | 244 | 470 | 69583 | 〃 |
| 〃 | Zentsûji | | 〃 | 18 43 | 71 42 | 〃 | 4423 | 4047 | 27 | 8 | 7 | 250 | 0 | 69113 | 5 |

Route 1′. B.M. 295—Naruto—B.M. 295.

| Pref. | No. | B.M. | Date 1953 | Time | $\sum\delta T$ | $LD$ | $SD$ | 0.9150 × $SD$ | $h$ (cm) | 0.3086 × $h$ | $E.T.$ | 6.32 × $\sum\delta T$ Flow | $\sum\delta g$ | $g$ 979. | Field Note No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h m | h m | | | | | | | | | | |
| 27 | 3655 | 295 | IV 2 | 16 31 | 0 00 | | 2863 | 2620 | 55 | 17 | 2 | 0 | 0 | 68579 | 70 |
| 35 | Naruto 3656 | | 〃 | 19 50 | 3 19 | | 2468 | 2258 | 27 | 8 | − 7 | 21 | − 401 | 68178 | 〃 |
| 〃 | 〃 3662 | | IV 3 | 11 46 | | | 2575 | 2356 | 〃 | 〃 | 8 | | | | 〃 |
| 〃 | 3663 | 300 | 〃 | 12 51 | 4 24 | | 2588 | 2368 | 58 | 18 | 12 | 28 | − 382 | 68197 | 〃 |
| 〃 | 3664 | 299 | 〃 | 13 03 | 4 36 | | 2705 | 2475 | 27 | 8 | 12 | 29 | − 286 | 68293 | 〃 |
| 〃 | 3665 | No. 8 | 〃 | 13 39 | 5 12 | | 2450 | 2242 | 67 | 21 | 13 | 33 | − 509 | 68070 | 〃 |
| 27 | 3666 | 295 | 〃 | 17 07 | 8 40 | | 3040 | 2782 | 60 | 19 | 6 | 55 | 0 | 68579 | 〃 |

Route 1″. Naruto—B.M. J. 5066—Naruto.

| Pref. | No. | B.M. | Date 1953 | Time | $\sum\delta T$ | $LD$ | $SD$ | 0.9150 × $SD$ | $h$ (cm) | 0.3086 × $h$ | $E.T.$ | 2.11 × $\sum\delta T$ Flow | $\sum\delta g$ | $g$ 979. | Field Note No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h m | h m | | | | | | | | | | |
| 35 | Naruto 3657 | | IV 3 | 9 50 | 0 00 | | 2580 | 2361 | 27 | 8 | − 1 | 0 | 0 | 68178 | 70 |
| 〃 | 3658 | 302 | 〃 | 10 43 | 0 53 | | 2641 | 2417 | 65 | 20 | 4 | 2 | 71 | 68249 | 〃 |
| 〃 | 3659 | 303 | 〃 | 10 57 | 1 07 | | 2486 | 2275 | 51 | 16 | 4 | 2 | − 75 | 68103 | 〃 |
| 〃 | 3660 | 304 | 〃 | 11 10 | 1 20 | | 2300 | 2105 | 67 | 21 | 4 | 3 | − 241 | 67937 | 〃 |
| 〃 | 3661 | J. 5066 | 〃 | 11 19 | 1 29 | | 1989 | 1820 | 71 | 22 | 4 | 3 | − 525 | 67653 | 〃 |
| 〃 | Naruto 3662 | | 〃 | 11 46 | 1 56 | | 2575 | 2356 | 27 | 8 | 8 | 4 | 0 | 68178 | 〃 |

Table IX. Results along Route 2. (0.01 mgal)

Route 2. B.M. 3385—Zentsûji—Kawanoe—Imabari—Matsuyama—Kuma—B.M. 5002.

| Pref. | No. | B.M. | Date 1951 | Time | $\sum\delta T$ | $LD$ | $SD$ | 0.9150 × $SD$ | $h$ (cm) | 0.3086 × $h$ | $E.T.$ | 5.64 × $\sum\delta T$ Flow | $\sum\delta g$ | $g$ 979. | Field Note No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h m | h m | | | | | | | | | | |
| 36 | 1 | J. 3385 | IV 16 | 17 07 | 0 00 | 430 | 4985 | 4516 | 29 | 9 | 1 | 0 | 0 | 69583 | 4b |
| 〃 | Zentsûji | | 〃 | 22 39 | 5 32 | 〃 | 4464 | 4085 | 27 | 8 | 2 | 31 | − 462 | 69121 | 5 |
| 〃 | 〃 | | IV 17 | 11 36 | | 〃 | 4509 | 4126 | 〃 | 〃 | − 1 | | | | 〃 |
| 〃 | 1 | J. 3385 | 〃 | 12 34 | 6 30 | 〃 | 5030 | 4602 | 29 | 9 | − 2 | 37 | 8 | 69591 | 〃 |
| 〃 | 124 | 3387 | 〃 | 13 07 | 7 03 | 〃 | 4357 | 3987 | 24 | 7 | − 2 | 40 | − 612 | 68971 | 〃 |
| 〃 | 125 | 3388 | 〃 | 13 22 | 7 18 | 〃 | 3728 | 3411 | 50 | 15 | − 2 | 41 | −1181 | 68402 | 〃 |
| 〃 | 126 | 3390 | 〃 | 13 38 | 7 34 | 〃 | 4379 | 4007 | 47 | 15 | − 3 | 43 | − 588 | 68995 | 〃 |
| 〃 | 127 | 3392 | 〃 | 13 56 | 7 52 | 〃 | 3219 | 2945 | 39 | 12 | − 3 | 45 | −1655 | 67928 | 〃 |
| 〃 | 128 | 3394 | 〃 | 14 14 | 8 10 | 〃 | 2802 | 2564 | 26 | 8 | − 3 | 46 | −2041 | 67542 | 〃 |
| 〃 | 129 | 3396 | 〃 | 14 34 | 8 30 | 〃 | 2298 | 2103 | 33 | 10 | − 3 | 48 | −2502 | 67081 | 〃 |
| 〃 | 130 | 3398 | 〃 | 14 50 | 8 46 | 〃 | 1768 | 1618 | 41 | 13 | − 3 | 50 | −2986 | 66597 | 〃 |
| 〃 | 131 | 3400 | 〃 | 15 09 | 9 05 | 〃 | 1576 | 1442 | 39 | 12 | − 3 | 51 | −3164 | 66419 | 〃 |
| 37 | 132 | 3403 | 〃 | 16 29 | 10 25 | 〃 | 1211 | 1108 | 47 | 15 | − 2 | 59 | −3502 | 66081 | 〃 |
| 〃 | Kawanoe | | 〃 | 19 42 | 13 38 | 〃 | 1167 | 1068 | 27 | 8 | 7 | 77 | −3558 | 66025 | 〃 |
| 〃 | 〃 | | IV 18 | 8 15 | | 〃 | 1219 | 1115 | 〃 | 〃 | 3 | | | | 〃 |
| 〃 | 132 | 3403 | 〃 | 8 32 | 13 55 | 〃 | 1284 | 1175 | 45 | 14 | 5 | 78 | −3491 | 66092 | 〃 |
| 〃 | 133 | 3405 | 〃 | 8 59 | 14 22 | 〃 | 0813 | 0744 | 45 | 14 | 5 | 81 | −3925 | 65658 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 9 01 | | 418 | 6169 | 5645 | 〃 | 〃 | 5 | | | | 〃 |
| 〃 | 134 | 3408 | 〃 | 9 39 | 15 00 | 〃 | 5514 | 5045 | 54 | 17 | 6 | 85 | −4525 | 65058 | 〃 |
| 〃 | 135 | 3410 | 〃 | 10 04 | 15 25 | 〃 | 4658 | 4262 | 35 | 11 | 6 | 87 | −5316 | 64267 | 〃 |
| 〃 | 136 | 3412 | 〃 | 10 28 | 15 49 | 〃 | 4426 | 4050 | 43 | 13 | 6 | 89 | −5528 | 64055 | 〃 |
| 〃 | 137 | 3413 | 〃 | 10 44 | 16 05 | 〃 | 3991 | 3652 | 16 | 5 | 6 | 91 | −5936 | 63647 | 〃 |
| 〃 | 138 | 3415 | 〃 | 11 22 | 16 43 | 〃 | 1682 | 1539 | 39 | 12 | 6 | 94 | −8045 | 61538 | 〃 |
| 〃 | 139 | 3417 | 〃 | 11 43 | 17 04 | 〃 | 3724 | 3407 | 11 | 3 | 3 | 96 | −6191 | 63392 | 〃 |
| 〃 | 140 | 3419 | 〃 | 12 04 | 17 25 | 〃 | 4020 | 3678 | 49 | 15 | 3 | 98 | −5910 | 63673 | 〃 |
| 〃 | 141 | 3421 | 〃 | 12 24 | 17 45 | 〃 | 3994 | 3655 | 55 | 17 | 3 | 100 | −5933 | 63650 | 〃 |
| 〃 | 142 | 3423 | 〃 | 12 44 | 18 05 | 〃 | 4510 | 4127 | 34 | 10 | 0 | 102 | −5473 | 64110 | 〃 |
| 〃 | 143 | 3425 | 〃 | 13 29 | 18 50 | 〃 | 4603 | 4212 | 30 | 9 | 0 | 106 | −5393 | 64190 | 〃 |
| 〃 | 144 | 3427 | 〃 | 14 28 | 19 49 | 〃 | 3598 | 3292 | 14 | 4 | − 4 | 112 | −6328 | 63255 | 〃 |
| 〃 | 145 | 3429 | 〃 | 14 56 | 20 17 | 〃 | 4098 | 3750 | 35 | 11 | − 6 | 114 | −5867 | 63716 | 〃 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 〃 | 146 | | 3430 | 〃 | 15 10 | 20 31 | 〃 | 4215 | 3857 | 49 | 15 | − 6 | 116 | −5758 | 63825 | 〃 |
| 〃 | 147 | | 3432 | 〃 | 15 28 | 20 49 | 〃 | 4561 | 4173 | 41 | 13 | − 6 | 117 | −5445 | 64138 | 〃 |
| 〃 | 148 | | 3434 | 〃 | 15 49 | 21 10 | 〃 | 4830 | 4419 | 44 | 14 | − 6 | 120 | −5201 | 64382 | 〃 |
| 〃 | 149 | | 3435 | 〃 | 16 10 | 21 31 | 〃 | 6139 | 5617 | 35 | 11 | − 6 | 121 | −4007 | 65576 | 〃 |
| 〃 | 〃 | | 〃 | 〃 | 16 12 | | 423 | 3917 | 3584 | 35 | 11 | − 6 | | | | 〃 |
| 〃 | 150 | | 3437 | 〃 | 16 32 | 21 51 | 〃 | 5050 | 4621 | 61 | 19 | − 4 | 124 | −2963 | 66620 | 〃 |
| 〃 | 151 | | 3439 | 〃 | 16 50 | 22 09 | 〃 | 5255 | 4808 | 46 | 14 | − 4 | 125 | −2782 | 66801 | 〃 |
| 〃 | 152 | | 3440 | 〃 | 17 02 | 22 21 | 〃 | 5173 | 4733 | 64 | 20 | − 4 | 126 | −2852 | 66731 | 〃 |
| 〃 | Imabari | | | 〃 | 19 32 | 24 51 | 〃 | 5239 | 4794 | 27 | 8 | 6 | 140 | −2807 | 66776 | 〃 |
| 〃 | 〃 | | | IV 19 | 8 15 | | 〃 | 5289 | 4839 | 〃 | 〃 | 2 | | | | 〃 |
| 〃 | 153 | | 3442 | 〃 | 9 09 | 25 45 | 〃 | 5517 | 5048 | 49 | 15 | 6 | 146 | −2593 | 66990 | 〃 |
| 〃 | 154 | | 3444 | 〃 | 9 38 | 26 14 | 〃 | 6243 | 5712 | 37 | 11 | 10 | 148 | −1931 | 67652 | 〃 |
| 〃 | 155 | | 3464 | 〃 | 10 12 | 26 48 | 〃 | 4916 | 4498 | 45 | 14 | 10 | 151 | −3145 | 66438 | 〃 |
| 〃 | 156 | | 3466 | 〃 | 10 30 | 27 06 | 〃 | 4861 | 4448 | 46 | 14 | 10 | 153 | −3197 | 66386 | 〃 |
| 〃 | 157 | | 3468 | 〃 | 10 49 | 27 25 | 〃 | 4638 | 4244 | 96 | 30 | 10 | 155 | −3387 | 66196 | 〃 |
| 〃 | 158 | | 3470 | 〃 | 11 07 | 27 43 | 〃 | 3512 | 3213 | 44 | 14 | 10 | 156 | −4435 | 65148 | 〃 |
| 〃 | 159 | | 3472 | 〃 | 11 40 | 28 16 | 〃 | 3887 | 3557 | 42 | 13 | 8 | 160 | −4098 | 65485 | 〃 |
| 〃 | 160 | | 3474 | 〃 | 12 02 | 28 38 | 〃 | 2947 | 2697 | 43 | 13 | 8 | 161 | −4959 | 64624 | 〃 |
| 〃 | 161 | | 3476 | 〃 | 13 08 | 29 44 | 〃 | 2238 | 2048 | 45 | 14 | 4 | 168 | −5618 | 63965 | 〃 |
| 〃 | 162 | | 3478 | 〃 | 13 23 | 29 59 | 〃 | 1250 | 1144 | 48 | 15 | 4 | 169 | −6522 | 63061 | 〃 |
| 〃 | 〃 | | 〃 | 〃 | 13 25 | | 413 | 5695 | 5211 | 〃 | 〃 | 4 | | | | 〃 |
| 〃 | 163 | | 3480 | 〃 | 13 39 | 30 13 | 〃 | 4682 | 4284 | 47 | 15 | − 1 | 170 | −7455 | 62128 | 〃 |
| 〃 | 164 | | 3482 | 〃 | 14 00 | 30 34 | 〃 | 3556 | 3254 | 47 | 15 | − 1 | 173 | −8488 | 61095 | 〃 |
| 〃 | 165 | Matsuyama | G.S.* | 〃 | 15 08 | 31 42 | 〃 | 2217 | 2029 | 19 | 6 | − 5 | 179 | −9732 | 59851 | 〃 |
| 〃 | 166 | | W.S.** | 〃 | 16 28 | 33 02 | 〃 | 2069 | 1893 | 19 | 6 | − 8 | 186 | −9878 | 59705 | 〃 |
| 〃 | Matsuyama | | | 〃 | 18 41 | 35 15 | 〃 | 3162 | 2893 | 27 | 8 | − 3 | 199 | −8884 | 60699 | 〃 |
| 〃 | 〃 | | | IV 20 | 9 16 | | 〃 | 3220 | 2946 | 〃 | 〃 | 8 | | | | 〃 |
| 〃 | 164 | | 3482 | 〃 | 9 33 | 35 32 | 〃 | 3658 | 3347 | 45 | 14 | 11 | 200 | −8475 | 61108 | 〃 |
| 〃 | 167 | | 4733 | 〃 | 10 18 | 36 17 | 〃 | 3049 | 2790 | 41 | 13 | 11 | 205 | −9038 | 60545 | 〃 |
| 〃 | 168 | | 4731 | 〃 | 10 34 | 36 33 | 〃 | 2563 | 2345 | 49 | 15 | 11 | 206 | −9482 | 60101 | 〃 |
| 〃 | 〃 | | 〃 | 〃 | 10 36 | | 405 | 6180 | 5655 | 〃 | 〃 | 11 | | | | 〃 |
| 〃 | 169 | | 4729 | 〃 | 10 53 | 36 50 | 〃 | 5557 | 5085 | 47 | 15 | 11 | 208 | −10054 | 59529 | 〃 |
| 〃 | 170 | | 4728 | 〃 | 11 09 | 37 06 | 〃 | 3470 | 3175 | 47 | 15 | 11 | 209 | −11965 | 57618 | 〃 |
| 〃 | 171 | | 4727 | 〃 | 11 22 | 37 19 | 〃 | 1714 | 1568 | 38 | 12 | 11 | 210 | −13576 | 56007 | 6 |
| 〃 | 〃 | | 〃 | 〃 | 11 25 | | 394 | 6616 | 6054 | 〃 | 〃 | 11 | | | | 〃 |
| 〃 | 172 | | 4726 | 〃 | 11 40 | 37 34 | 〃 | 4509 | 4126 | 45 | 14 | 10 | 212 | −15505 | 54078 | 〃 |
| 〃 | 〃 | | 〃 | 〃 | 11 45 | | 390 | 6299 | 5764 | 〃 | 〃 | 10 | | | | 〃 |
| 〃 | 173 | | 4724 | 〃 | 12 04 | 37 53 | 〃 | 2258 | 2066 | 45 | 14 | 10 | 214 | −19205 | 50378 | 〃 |
| 〃 | 174 | | 4722 | 〃 | 12 41 | 38 30 | 〃 | 1942 | 1777 | 49 | 15 | 9 | 217 | −19497 | 50086 | 〃 |
| 〃 | 175 | | 4720 | 〃 | 13 02 | 38 51 | 〃 | 4615 | 4223 | 44 | 14 | 9 | 219 | −17054 | 52529 | 〃 |

* Geophysical Station of the Earthquake Research Institute. ** Weather Station Seismometer Room.

Table IX. (Continued)

| Pref. | No. | B.M. | Date 1951 | Time | $\sum\delta T$ | $LD$ | $SD$ | 0.9150 × $SD$ | $h$ (cm) | 0.3086 × $h$ | $E.T.$ | 5.64 × $\sum\delta T$ Flow | $\sum\delta g$ | $g$ 979. | Field Note No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h m | h m | | | | | | | | | | |
| 37 | 176 | 4718 | IV 20 | 14 25 | 40 14 | 390 | 5191 | 4750 | 41 | 13 | 4 | 227 | −16541 | 53042 | 6 |
| 〃 | 〃 | 〃 | 〃 | 14 28 | | 397 | 2093 | 1915 | 〃 | 〃 | 4 | | | | 〃 |
| 〃 | 177 | 4716 | 〃 | 14 49 | 40 35 | 〃 | 2836 | 2595 | 43 | 13 | − 2 | 229 | −15869 | 53714 | 〃 |
| 〃 | 178 | 4714 | 〃 | 15 06 | 40 52 | 〃 | 3242 | 2966 | 42 | 13 | − 2 | 231 | −15500 | 54083 | 〃 |
| 〃 | Kuma | | 〃 | 19 24 | 45 10 | 〃 | 2158 | 1975 | 27 | 8 | − 7 | 255 | −16525 | 53058 | 〃 |
| 〃 | 〃 | | IV 21 | 8 32 | | 〃 | 2205 | 2018 | 〃 | 〃 | 8 | | | | 〃 |
| 〃 | 178 | 4714 | 〃 | 9 16 | 45 54 | 〃 | 3328 | 3045 | 19 | 6 | 8 | 259 | −15504 | 54079 | 〃 |
| 〃 | 179 | 4711 | 〃 | 9 45 | 46 23 | 〃 | 4582 | 4193 | 43 | 13 | 13 | 262 | −14347 | 55236 | 〃 |
| 〃 | 180 | 4709 | 〃 | 10 05 | 46 43 | 〃 | 3976 | 3638 | 48 | 15 | 13 | 263 | −14901 | 54682 | 〃 |
| 〃 | 181 | 4707 | 〃 | 10 24 | 47 02 | 〃 | 4950 | 4529 | 40 | 12 | 13 | 265 | −14015 | 55568 | 〃 |
| 〃 | 182 | 4705 | 〃 | 10 45 | 47 23 | 〃 | 5794 | 5302 | 40 | 12 | 16 | 267 | −13241 | 56342 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 10 47 | | 404 | 2697 | 2468 | 〃 | 〃 | 16 | | | | 〃 |
| 38 | 183 | 4703 | 〃 | 11 17 | 47 53 | 〃 | 3462 | 3168 | 35 | 11 | 16 | 270 | −12545 | 57038 | 〃 |
| 〃 | 184 | 4700 | 〃 | 11 40 | 48 16 | 〃 | 3118 | 2853 | 39 | 12 | 15 | 272 | −12862 | 56721 | 〃 |
| 〃 | 185 | 4697 | 〃 | 12 03 | 48 39 | 〃 | 5507 | 5039 | 50 | 15 | 15 | 275 | −10676 | 58907 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 12 05 | | 410 | 2810 | 2571 | 〃 | 〃 | 15 | | | | 〃 |
| 〃 | 186 | 4694 | 〃 | 13 34 | 50 08 | 〃 | 4042 | 3698 | 38 | 12 | 6 | 283 | −9569 | 60014 | 〃 |
| 〃 | 187 | 4689 | 〃 | 13 59 | 50 33 | 〃 | 4514 | 4130 | 52 | 16 | 6 | 285 | −9135 | 60448 | 〃 |
| 〃 | 188 | 4687 | 〃 | 14 15 | 50 49 | 〃 | 5335 | 4882 | 50 | 15 | 6 | 287 | −8386 | 61197 | 〃 |
| 〃 | 189 | 4686 | 〃 | 14 42 | 51 16 | 〃 | 5773 | 5282 | 40 | 12 | − 1 | 289 | −7998 | 61585 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 14 43 | | 417 | 2633 | 2409 | 〃 | 〃 | − 1 | | | | 〃 |
| 〃 | 190 | 4684 | 〃 | 15 00 | 51 33 | 〃 | 2094 | 1916 | 41 | 13 | − 1 | 291 | −8492 | 61091 | 〃 |
| 〃 | 191 | 4993 | 〃 | 15 30 | 52 03 | 〃 | 4210 | 3852 | 102 | 31 | − 6 | 294 | −6546 | 63037 | 〃 |
| 〃 | 192 | 4995 | 〃 | 15 49 | 52 22 | 〃 | 4380 | 4008 | 31 | 10 | − 6 | 296 | −6413 | 63170 | 〃 |
| 〃 | 193 | 4998 | 〃 | 16 41 | 53 14 | 〃 | 4707 | 4307 | 45 | 14 | − 9 | 300 | −6117 | 63466 | 〃 |
| 〃 | 194 | F. 35 | 〃 | 17 02 | 53 35 | 〃 | 4872 | 4458 | 27 | 8 | − 9 | 302 | −5974 | 63609 | 〃 |
| 〃 | 91 | 5002 | 〃 | 17 19 | 53 52 | 〃 | 4925 | 4506 | 55 | 17 | − 9 | 304 | −5919 | 63664 | 〃 |

Table X. Results along Route 3. (0.01 mgal)

Route 3. Kôchi—B.M. 5002—Kubokawa—Sukumo—Uwajima—Ôzu—B.M. 3482

| Pref. | No. | B.M. | Date 1951 | Time | $\Sigma\delta T$ | $LD$ | $SD$ | 0.9150 × $SD$ | $h$ (cm) | 0.3086 × $h$ | $E.T.$ | 4.49 × $\Sigma\delta T$ Flow | $\Sigma\delta g$ | $g$ 979. | Field Note No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h m | h m | | | | | | | | | | |
| 38 | Kôchi | | IV 23 | 8 32 | − 2 25 | 420 | 3646 | 3336 | 27 | 8 | 2 | − 11 | − 89 | 63575 | 6 |
| 〃 | 195 | 10882 | 〃 | 9 20 | − 1 37 | 〃 | 3654 | 3343 | 41 | 13 | 2 | − 7 | − 81 | 63583 | 〃 |
| 〃 | 196 | 10884 | 〃 | 9 45 | − 1 12 | 〃 | 4046 | 3702 | 38 | 12 | 9 | − 5 | 282 | 63946 | 〃 |
| 〃 | 197 | Urato Tide Gauge | 〃 | 10 10 | − 47 | 〃 | 4072 | 3726 | 57 | 18 | 9 | − 4 | 311 | 63975 | 〃 |
| 〃 | 198 | 13 | 〃 | 10 20 | − 37 | 〃 | 4142 | 3790 | 36 | 11 | 9 | − 3 | 367 | 64031 | 〃 |
| 〃 | 91 | 5002 | 〃 | 10 57 | 0 | 〃 | 3731 | 3414 | 55 | 17 | 15 | 0 | 0 | 63664 | 〃 |
| 〃 | 199 | 4991 | 〃 | 12 09 | 1 12 | 〃 | 2185 | 1999 | 22 | 7 | 19 | 5 | −1426 | 62238 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 12 17 | | 411 | 6173 | 5648 | 〃 | 〃 | 19 | | | | 〃 |
| 〃 | 200 | J. 4683 | 〃 | 12 33 | 1 28 | 〃 | 5167 | 4728 | 45 | 14 | 19 | 7 | −2341 | 61323 | 〃 |
| 〃 | 201 | 4681 | 〃 | 12 58 | 1 53 | 〃 | 4057 | 3712 | 31 | 10 | 19 | 9 | −3363 | 60301 | 〃 |
| 〃 | 202 | 4677 | 〃 | 13 30 | 2 25 | 〃 | 4720 | 4319 | 47 | 15 | 17 | 11 | −2755 | 60909 | 〃 |
| 〃 | 202R | | 〃 | 13 39 | 2 34 | 〃 | 5883 | 5383 | | | 17 | 12 | −1707 | 61957 | 〃 |
| 〃 | 〃 | | | 13 42 | | 417 | 3200 | 2928 | | | 17 | | | | 〃 |
| 〃 | 203 | 4675 | 〃 | 13 55 | 2 47 | 〃 | 4390 | 4017 | 55 | 17 | 17 | 13 | − 602 | 63062 | 〃 |
| 〃 | 204 | 4673 | 〃 | 15 30 | 4 22 | 〃 | 4623 | 4230 | 48 | 15 | 5 | 20 | − 410 | 63254 | 〃 |
| 〃 | 205 | 4670 | 〃 | 16 37 | 5 29 | 〃 | 4457 | 4078 | 46 | 14 | − 2 | 25 | − 575 | 63089 | 〃 |
| 〃 | 206 | 4667 | 〃 | 17 17 | 6 19 | 〃 | 4518 | 4134 | 45 | 14 | − 2 | 28 | − 522 | 63142 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 17 30 | | 413 | 6318 | 5781 | 〃 | 〃 | − 7 | | | | 〃 |
| 〃 | 207 | 4664 | 〃 | 17 58 | 6 47 | 〃 | 3578 | 3274 | 51 | 16 | − 7 | 31 | −3030 | 60634 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 18 02 | | 406 | 6728 | 6156 | 〃 | 〃 | − 7 | | | | 〃 |
| 〃 | 208 | 4661 | 〃 | 18 26 | 7 11 | 〃 | 3172 | 2902 | 35 | 11 | − 7 | 32 | −6290 | 57374 | 〃 |
| 〃 | 209 | 4659 | 〃 | 18 42 | 7 27 | 〃 | 3732 | 3415 | 52 | 16 | −10 | 34 | −5777 | 57887 | 〃 |
| 〃 | 210 | 4657 | 〃 | 19 00 | 7 45 | 〃 | 3754 | 3435 | 39 | 12 | −10 | 35 | −5762 | 57902 | 〃 |
| 〃 | 211 | 4654 | 〃 | 19 35 | 8 20 | 〃 | 4238 | 3878 | 47 | 15 | −10 | 37 | −5318 | 58346 | 〃 |
| 〃 | Kubokawa | | 〃 | 19 50 | 8 35 | 〃 | 4286 | 3922 | 27 | 8 | −10 | 39 | −5283 | 58381 | 7 |
| 〃 | 〃 | | IV 24 | 8 34 | | 〃 | 4326 | 3956 | 〃 | 〃 | − 2 | | | | 〃 |
| 〃 | 211 | 4654 | 〃 | 9 18 | 9 19 | 〃 | 4280 | 3916 | 45 | 14 | − 2 | 42 | −5320 | 58344 | 〃 |
| 〃 | 212 | 4652 | 〃 | 9 40 | 9 41 | 〃 | 3126 | 2860 | 26 | 8 | 4 | 44 | −6378 | 57286 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 9 45 | | 410 | 1310 | 1199 | 〃 | 〃 | 4 | | | | 〃 |
| 〃 | 213 | 4650 | 〃 | 10 21 | 10 17 | 〃 | 5091 | 4658 | 43 | 13 | 4 | 46 | −2916 | 60748 | 〃 |
| 〃 | 214 | 4648 | 〃 | 10 43 | 10 39 | 〃 | 5895 | 5394 | 126 | 39 | 11 | 48 | −2149 | 61515 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 10 47 | | 415 | 3707 | 3392 | 〃 | 〃 | 11 | | | | 〃 |
| 〃 | 215 | 4646 | 〃 | 11 05 | 10 57 | 〃 | 3970 | 3633 | 51 | 16 | 11 | 49 | −1932 | 61732 | 〃 |
| 〃 | 216 | 4644 | 〃 | 11 20 | 11 12 | 〃 | 4229 | 3870 | 34 | 10 | 11 | 50 | −1702 | 61962 | 〃 |
| 〃 | 217 | 4642 | 〃 | 11 56 | 11 48 | 〃 | 3879 | 3549 | 31 | 10 | 16 | 53 | −2021 | 61643 | 〃 |

Table X. (Continued)

| Pref. | No. | B.M. | Date 1951 | Time | $\sum\delta T$ | $LD$ | $SD$ | 0.9150 × $SD$ | $h$ (cm) | 0.3086 × $h$ | $E.T.$ | $4.49\times\sum\delta T$ Flow | $\sum\delta g$ | $g$ 979. | Field Note No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h m | h m | | | | | | | | | | |
| 38 | 218 | 4640 | IV 24 | 12 20 | 12 12 | 415 | 4026 | 3684 | 43 | 13 | 16 | 55 | −1885 | 61779 | 7 |
| 〃 | 219 | 4638 | 〃 | 12 50 | 12 42 | 〃 | 3540 | 3239 | 36 | 11 | 19 | 57 | −2331 | 61333 | 〃 |
| 〃 | 220 | 4636 | 〃 | 13 13 | 13 05 | 〃 | 3574 | 3270 | 27 | 8 | 19 | 59 | −2305 | 61359 | 〃 |
| 〃 | 221 | 4635 | 〃 | 14 09 | 14 01 | 〃 | 3324 | 3041 | 95 | 29 | 19 | 63 | −2517 | 61147 | 〃 |
| 〃 | 222 | 4633 | 〃 | 14 36 | 14 28 | 〃 | 3461 | 3167 | 30 | 9 | 16 | 65 | −2416 | 61248 | 〃 |
| 〃 | 223 | 4631 | 〃 | 16 39 | 16 31 | 〃 | 3129 | 2863 | 18 | 6 | 4 | 74 | −2744 | 60920 | 〃 |
| 〃 | 224 | 4630 | 〃 | 16 50 | 16 42 | 〃 | 3164 | 2895 | 62 | 19 | 4 | 75 | −2700 | 60964 | 〃 |
| 〃 | 225 | 4629 | 〃 | 17 02 | 16 54 | 〃 | 3005 | 2750 | 51 | 16 | 4 | 76 | −2849 | 60815 | 〃 |
| 〃 | 226 | 4627 | 〃 | 17 20 | 17 12 | 〃 | 2659 | 2433 | 108 | 33 | 4 | 77 | −3150 | 60514 | 〃 |
| 〃 | 227 | 4625 | 〃 | 17 39 | 17 31 | 〃 | 2740 | 2507 | − 14 | − 4 | − 2 | 79 | −3121 | 60543 | 〃 |
| 〃 | 228 | 4623 | 〃 | 17 59 | 17 51 | 〃 | 2483 | 2272 | 84 | 26 | − 2 | 80 | −3327 | 60337 | 〃 |
| 〃 | 229 | 4621 | 〃 | 18 18 | 18 10 | 〃 | 1398 | 1279 | − 33 | −10 | − 2 | 82 | −4358 | 59306 | 〃 |
| 〃 | 230 | 4619 | 〃 | 18 37 | 18 29 | 〃 | 2088 | 1911 | 51 | 16 | − 6 | 83 | −3705 | 59959 | 〃 |
| 〃 | Sukumo | | 〃 | 19 17 | 19 09 | 〃 | 2095 | 1917 | 27 | 8 | − 6 | 86 | −3710 | 59954 | 〃 |
| 〃 | 〃 | | IV 25 | 7 58 | | 〃 | 2149 | 1966 | 〃 | 〃 | − 9 | | | | 〃 |
| 〃 | 230 | 4619 | 〃 | 8 53 | 20 04 | 〃 | 2149 | 1966 | 52 | 16 | − 5 | 90 | −3702 | 59962 | 〃 |
| 〃 | 231 | 4616 | 〃 | 9 42 | 20 53 | 〃 | 0274 | 0251 | 38 | 12 | 0 | 94 | −5420 | 58244 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 9 49 | | 410 | 2496 | 2284 | 〃 | 〃 | 0 | | | | 〃 |
| 37 | 232 | 4613 | 〃 | 11 15 | 22 19 | 〃 | 1981 | 1813 | 34 | −10 | 6 | 100 | −5893 | 57771 | 〃 |
| 〃 | 233 | 4610 | 〃 | 11 48 | 22 52 | 〃 | 3340 | 3056 | 18 | 6 | 11 | 103 | −4652 | 59012 | 〃 |
| 〃 | 234 | 4608 | 〃 | 13 43 | 24 47 | 〃 | 3475 | 3180 | 36 | 11 | 18 | 111 | −4524 | 59140 | 〃 |
| 〃 | 235 | 4606 | 〃 | 14 05 | 25 09 | 〃 | 3129 | 2863 | 56 | 17 | 18 | 113 | −4837 | 58827 | 〃 |
| 〃 | 236 | 4603 | 〃 | 14 31 | 25 35 | 〃 | 2861 | 2618 | 47 | 15 | 18 | 115 | −5086 | 58578 | 〃 |
| 〃 | 237 | 4598 | 〃 | 15 23 | 26 27 | 〃 | 3540 | 3239 | 37 | 11 | 17 | 119 | −4474 | 59190 | 〃 |
| 〃 | 238 | 4596 | 〃 | 15 42 | 26 46 | 〃 | 3894 | 3563 | 45 | 14 | 14 | 120 | −4151 | 59513 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 15 46 | | 406 | 5685 | 5202 | 45 | 14 | 14 | | | | 〃 |
| 〃 | 239 | 4595 | 〃 | 15 58 | 26 58 | 〃 | 5798 | 5305 | 125 | 39 | 14 | 121 | −4024 | 59640 | 〃 |
| 〃 | 240 | 4592 | 〃 | 16 40 | 27 40 | 〃 | 4828 | 4418 | 40 | 12 | 9 | 124 | −4946 | 58718 | 〃 |
| 〃 | 241 | 4590 | 〃 | 16 55 | 27 55 | 〃 | 5674 | 5192 | 59 | 18 | 9 | 125 | −4167 | 59497 | 〃 |
| 〃 | 242 | F. 44 | 〃 | 17 15 | 28 15 | 〃 | 5832 | 5336 | 33 | 10 | 9 | 127 | −4033 | 59631 | 〃 |
| 〃 | 243 | Uwajima W.S.* | 〃 | 17 42 | 28 42 | 〃 | 4932 | 4513 | 19 | 6 | 4 | 129 | −4867 | 58797 | 〃 |
| 〃 | 244 | 〃 ** | 〃 | 17 58 | 28 58 | 〃 | 4976 | 4553 | 46 | 14 | 4 | 130 | −4820 | 58844 | 〃 |
| 〃 | Uwajima | | 〃 | 19 40 | 30 40 | 〃 | 5878 | 5378 | 27 | 8 | − 5 | 138 | −4018 | 59646 | 〃 |
| 〃 | 〃 | | IV 26 | 8 08 | | 〃 | 5941 | 5436 | 〃 | 〃 | − 8 | | | | 〃 |
| 〃 | 242 | F. 44 | 〃 | 8 54 | 31 26 | 〃 | 5919 | 5416 | 33 | 10 | − 6 | 141 | −4037 | 59627 | 〃 |

*Weather Station Barometer Room. ** Weather Station Bench Mark.

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 〃 | 245 | 4587 | 〃 | 9 22 | 31 34 | 〃 | 5855 | 5357 | 48 | 15 | − 6 | 142 | −4092 | 59572 | 〃 |
| 〃 | 246 | 4585 | 〃 | 9 48 | 32 20 | 〃 | 4627 | 4234 | 47 | 15 | − 3 | 145 | −5215 | 58449 | 〃 |
| 〃 | 247 | 4583 | 〃 | 10 13 | 32 45 | 〃 | 5742 | 5254 | 54 | 17 | − 3 | 147 | −4195 | 59469 | 〃 |
| 〃 | 248 | 4581 | 〃 | 10 50 | 33 22 | 〃 | 4285 | 3921 | 16 | 5 | 2 | 150 | −5538 | 58126 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 10 53 | | 402 | 6098 | 5580 | 〃 | 〃 | 2 | | | | 〃 |
| 〃 | 249 | 4580 | 〃 | 11 15 | 33 44 | 〃 | 2044 | 1870 | 35 | 11 | 2 | 151 | −9243 | 54421 | 〃 |
| 〃 | 250 | 4578 | 〃 | 12 07 | 34 36 | 〃 | 1743 | 1595 | 39 | 12 | 6 | 155 | −9517 | 54147 | 〃 |
| 〃 | 251 | 4577 | 〃 | 14 28 | 36 57 | 〃 | 3333 | 3050 | 41 | 13 | 14 | 166 | −8064 | 55600 | 〃 |
| 〃 | 252 | 4575 | 〃 | 14 59 | 37 28 | 〃 | 3594 | 3289 | 47 | 15 | 16 | 168 | −7823 | 55841 | 〃 |
| 〃 | 253 | 4572 | 〃 | 15 37 | 38 06 | 〃 | 5603 | 5127 | 41 | 13 | 15 | 171 | −5991 | 57673 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 15 42 | | 412 | 1099 | 1006 | 〃 | 〃 | 〃 | | | | 〃 |
| 〃 | 254 | 4570 | 〃 | 16 07 | 38 31 | 〃 | 4963 | 4541 | 60 | 19 | 15 | 173 | −2452 | 61212 | 〃 |
| 〃 | 255 | J. 4569 | 〃 | 16 44 | 39 08 | 〃 | 5134 | 4698 | 59 | 18 | 13 | 176 | −2301 | 61363 | 〃 |
| 〃 | 256 | 4567 | 〃 | 17 17 | 39 41 | 〃 | 3912 | 3579 | 52 | 16 | 13 | 178 | −3424 | 60240 | 〃 |
| 〃 | 257 | 4565 | 〃 | 17 51 | 40 15 | 〃 | 1060 | 0970 | 43 | 13 | 9 | 181 | −6043 | 57621 | 8 |
| 〃 | 258 | 4563 | 〃 | 18 20 | 40 44 | 〃 | 4329 | 3961 | 34 | 10 | 8 | 183 | −3058 | 60606 | 〃 |
| 〃 | 259 | 4562 | 〃 | 18 41 | 41 05 | 〃 | 4365 | 3994 | 41 | 13 | 3 | 185 | −3029 | 60635 | 〃 |
| 〃 | Ôzu | | 〃 | 20 00 | 42 24 | 〃 | 4313 | 3946 | 27 | 8 | − 1 | 190 | −3091 | 60573 | 〃 |
| 〃 | 〃 | | IV 27 | 8 30 | | 〃 | 4371 | 3999 | 〃 | 〃 | − 6 | | | | 〃 |
| 〃 | 259 | 4562 | 〃 | 9 15 | 43 09 | 〃 | 4432 | 4055 | 41 | 13 | − 6 | 194 | −3034 | 60630 | 〃 |
| 〃 | 260 | 4561 | 〃 | 9 32 | 43 26 | 〃 | 4496 | 4114 | 61 | 19 | − 4 | 195 | −2968 | 60696 | 〃 |
| 〃 | 261 | 4558 | 〃 | 9 56 | 43 50 | 〃 | 4590 | 4200 | 36 | 11 | − 4 | 197 | −2892 | 60772 | 〃 |
| 〃 | 262 | 4557 | 〃 | 10 06 | 44 00 | 〃 | 4758 | 4354 | 35 | 11 | − 4 | 198 | −2739 | 60925 | 〃 |
| 〃 | 263 | 4555 | 〃 | 10 36 | 44 30 | 〃 | 3486 | 3190 | 43 | 13 | − 2 | 200 | −3901 | 59763 | 〃 |
| 〃 | 264 | 4552 | 〃 | 11 18 | 45 12 | 〃 | 3206 | 2933 | 39 | 12 | − 2 | 203 | −4162 | 59502 | 〃 |
| 〃 | 265 | 4550 | 〃 | 11 38 | 45 32 | 〃 | 1980 | 1812 | 32 | 10 | 2 | 204 | −5282 | 58382 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 11 42 | | 403 | 6024 | 5512 | 〃 | 〃 | 2 | | | | 〃 |
| 〃 | 266 | 4548 | 〃 | 12 05 | 45 55 | 〃 | 5240 | 4795 | 55 | 17 | 2 | 206 | −5994 | 57670 | 〃 |
| 〃 | 267 | 4547 | 〃 | 12 17 | 46 07 | 〃 | 4493 | 4111 | 40 | 12 | 2 | 207 | −6684 | 56980 | 〃 |
| 〃 | 268 | 4545 | 〃 | 12 37 | 46 27 | 〃 | 2796 | 2558 | 44 | 14 | 5 | 209 | −8234 | 55430 | 〃 |
| 〃 | 268R | | 〃 | 12 57 | 46 47 | 〃 | 6199 | 5672 | | | 5 | 210 | −5135 | 58529 | 〃 |
| 〃 | 〃 | | 〃 | 13 00 | | 410 | 3077 | 2815 | | | 5 | | | | 〃 |
| 〃 | 269 | 4543 | 〃 | 13 16 | 47 03 | 〃 | 4315 | 3948 | 29 | 9 | 5 | 211 | −3994 | 59670 | 〃 |
| 〃 | 270 | 4541 | 〃 | 13 37 | 47 24 | 〃 | 4381 | 4009 | 81 | 25 | 9 | 213 | −3915 | 59749 | 〃 |
| 〃 | 271 | 4539 | 〃 | 15 12 | 48 59 | 〃 | 4314 | 3947 | 54 | 17 | 12 | 220 | −3989 | 59675 | 〃 |
| 〃 | 272 | 4538 | 〃 | 15 23 | 49 10 | 〃 | 4594 | 4204 | 23 | 7 | 12 | 221 | −3743 | 59921 | 〃 |
| 〃 | 273 | 4536 | 〃 | 15 42 | 49 29 | 〃 | 5052 | 4623 | 41 | 13 | 13 | 222 | −3318 | 60346 | 〃 |
| 〃 | 164 | 3482 | 〃 | 16 05 | 49 52 | 〃 | 5871 | 5372 | 48 | 15 | 13 | 224 | −2569 | 61095 | 〃 |

Table XI. Results along Route $16_1$. (0.01 mgal)

Route $16_1$. B.M. 141—Kinoe—B.M. 3447—B.M. 3454—B.M. 141.

| Pref. | No. | B.M. | Date 1952 | Time | $\sum\delta T$ | $LD$ | $SD$ | 0.9150 × $SD$ | $h$ (cm) | 0.3086 × $h$ | $E.T.$ | 11.96× $\sum\delta T$ Flow | $\sum\delta g$ | $g$ 979. | Field Note No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h m | h m | | | | | | | | | | |
| 33 | 2285 | 141 | VIII 27 | 17 55 | 0 00 | | 2083 | 1906 | 64 | 20 | −4 | 0 | 0 | 68495 | 52 |
| 〃 | 2286 | Kinoe Tide Gauge | 〃 | 20 13 | 2 18 | | 1054 | 0964 | 27 | 8 | −6 | 28 | − 984 | 67511 | 〃 |
| 〃 | $2287_2$ | 〃 | VIII 28 | 7 17 | | | 3526 | 3226 | 〃 | 〃 | 7 | | | | 〃 |
| 37 | 2288 | 3447 | 〃 | 10 51 | 5 52 | | 3470 | 3175 | 46 | 14 | −2 | 71 | −1081 | 67414 | 〃 |
| 〃 | 2289 | 3448 | 〃 | 11 48 | 6 49 | | 4028 | 3686 | 103 | 32 | −2 | 81 | − 562 | 67933 | 〃 |
| 〃 | 2290 | 3449 | 〃 | 12 07 | 7 08 | | 4095 | 3747 | 62 | 19 | −2 | 85 | − 518 | 67977 | 〃 |
| 〃 | 2291 | 3450 | 〃 | 12 24 | 7 25 | | 4049 | 3705 | 47 | 15 | −2 | 89 | − 568 | 67927 | 〃 |
| 〃 | 2292 | 3451 | 〃 | 13 27 | 8 28 | | 2814 | 2575 | 68 | 21 | −2 | 102 | −1705 | 66790 | 〃 |
| 〃 | 2293 | 3453 | 〃 | 13 53 | 8 54 | | 4914 | 4496 | 82 | 25 | −2 | 106 | 216 | 68711 | 〃 |
| 〃 | 2294 | 3454 | 〃 | 14 06 | 9 07 | | 4904 | 4487 | 36 | 11 | −2 | 109 | 190 | 68685 | 〃 |
| 33 | 2295 | 141 | 〃 | 16 11 | 11 12 | | 4715 | 4314 | 67 | 21 | −4 | 134 | 0 | 68495 | 〃 |

(35) Tokushima Prefecture.

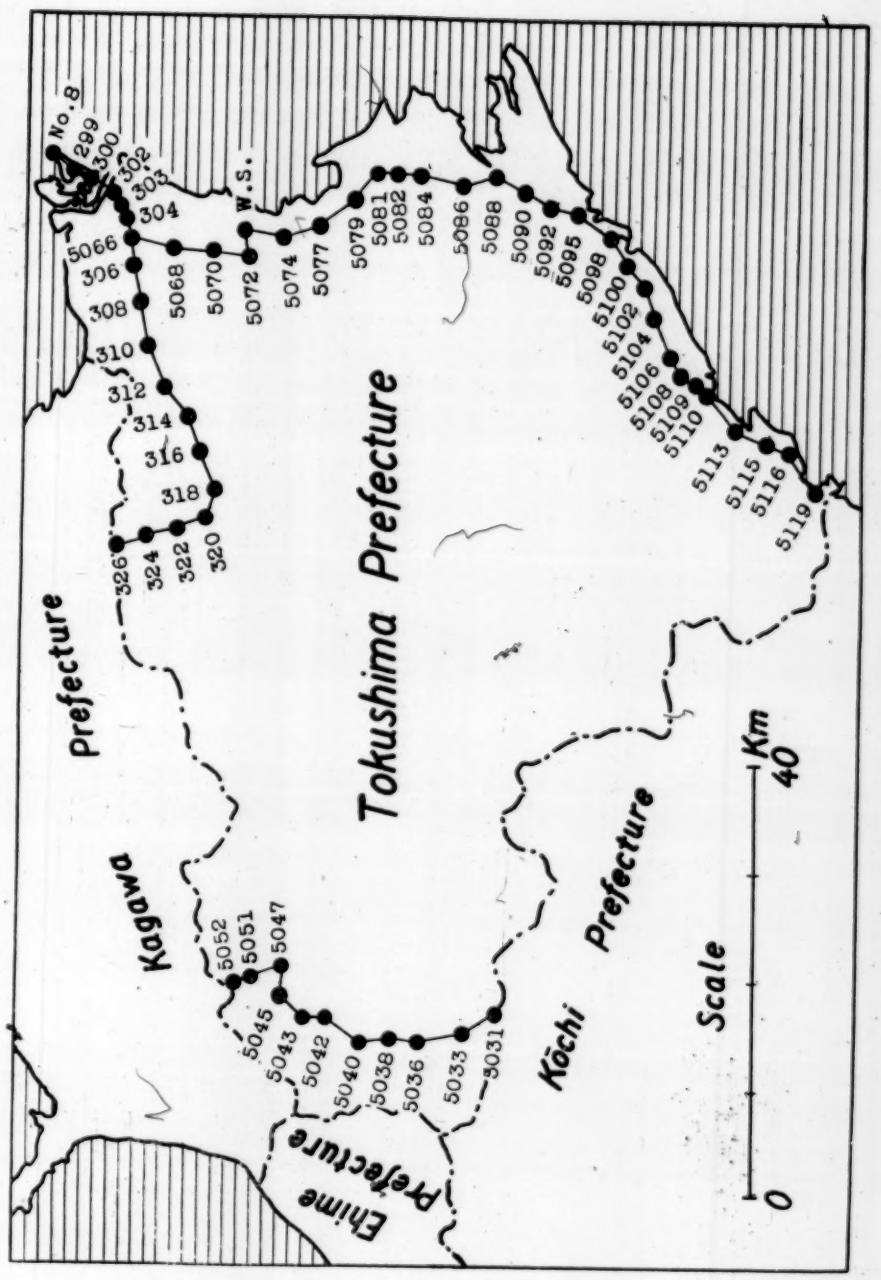



Fig. 4. Gravity Stations in Tokushima Prefecture.

Table XII. Synoptic Results for Tokushima Prefecture ( I ).

| B.M. | No. | $\varphi$ | $\lambda$ | $H$ (m) | Date 1951 | $g$ 979. | $g_0$ 979. | $g_0''$ 979. | $\gamma_0$ 979. | $\Delta g_0$ (mgal) | $\Delta g_0''$ (mgal) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 34° ′ | 134° ′ | | | | | | | | |
| 326 | 20 | 10.6 | 15.4 | 217.55 | IV 9 | 63831 | 7055 | 6811 | 6604 | 45.1 | 20.7 |
| 324 | 21 | 08.9 | 15.5 | 169.08 | 〃 | 64050 | 6927 | 6738 | 6580 | 34.7 | 15.8 |
| 322 | 22 | 07.5 | 16.3 | 104.79 | 〃 | 65629 | 6886 | 6769 | 6561 | 32.5 | 20.8 |
| 320 | 23 | 05.8 | 17.1 | 60.87 | 〃 | 66142 | 6802 | 6734 | 6537 | 26.5 | 19.7 |
| 318 | 24 | 05.3 | 18.7 | 32.35 | 〃 | 66981 | 6798 | 6762 | 6530 | 26.8 | 23.2 |
| 316 | 25 | 06.0 | 21.1 | 31.38 | 〃 | 67071 | 6804 | 6769 | 6540 | 26.4 | 22.9 |
| 314 | 26 | 06.5 | 23.4 | 18.12 | 〃 | 66720 | 6728 | 6708 | 6547 | 18.1 | 16.1 |
| 312 | 27 | 07.8 | 25.1 | 23.07 | 〃 | 66776 | 6749 | 6723 | 6565 | 18.4 | 15.8 |
| 310 | 28 | 08.3 | 27.5 | 6.45 | 〃 | 67190 | 6739 | 6732 | 6572 | 16.7 | 16.0 |
| 308 | 29 | 09.1 | 29.8 | 9.63 | 〃 | 67506 | 6780 | 6770 | 6583 | 19.7 | 18.7 |
| 306 | 30 | 09.0 | 32.1 | 1.87 | 〃 | 67351 | 6741 | 6739 | 6582 | 15.9 | 15.7 |
| J. 5066 | 31 | 09.5 | 33.6 | 1.79 | 〃 | 67653 | 6771 | 6769 | 6589 | 18.2 | 18.0 |
| 5068 | 32 | 07.5 | 33.3 | 1.46 | 〃 | 67216 | 6726 | 6725 | 6561 | 16.5 | 16.4 |
| 5070 | 33 | 05.3 | 33.3 | 2.97 | 〃 | 67409 | 6750 | 6747 | 6530 | 22.0 | 21.7 |
| 5072 | 34 | 03.5 | 33.0 | 1.15 | 〃 | 67991 | 6803 | 6801 | 6505 | 29.8 | 29.6 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 10 | 67989 | 6802 | 6801 | 6505 | 29.7 | 29.6 |
| 5074 | 35 | 01.7 | 33.1 | 1.47 | IV 9 | 68068 | 6811 | 6810 | 6480 | 33.1 | 33.0 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 10 | 68071 | 6812 | 6810 | 6480 | 33.2 | 33.0 |
| Tokushima W.S.* | 36 | 03.1 | 34.6 | 1.10 | 〃 | 67564 | 6760 | 6759 | 6499 | 26.1 | 26.0 |
| | | 33° | | | | | | | | | |
| 5077 | 37 | 59.4 | 35.1 | 1.81 | 〃 | 68616 | 6867 | 6865 | 6448 | 41.9 | 41.7 |
| 5079 | 38 | 57.9 | 36.3 | 3.34 | 〃 | 67540 | 6764 | 6761 | 6427 | 33.7 | 33.4 |
| 5081 | 39 | 56.8 | 37.8 | 5.98 | 〃 | 66720 | 6691 | 6684 | 6412 | 27.9 | 27.2 |
| 5082 | 40 | 55.9 | 37.6 | 7.18 | 〃 | 66626 | 6685 | 6677 | 6399 | 28.6 | 27.8 |
| 5084 | 41 | 54.2 | 37.3 | 5.44 | 〃 | 66111 | 6628 | 6622 | 6375 | 25.3 | 24.7 |
| 5086 | 42 | 52.3 | 37.1 | 10.52 | 〃 | 65881 | 6621 | 6609 | 6349 | 27.2 | 26.0 |
| 5088 | 43 | 50.9 | 36.5 | 35.73 | 〃 | 65428 | 6653 | 6613 | 6329 | 32.4 | 28.4 |
| 5090 | 44 | 48.9 | 36.2 | 17.83 | 〃 | 65805 | 6636 | 6616 | 6301 | 33.5 | 31.5 |
| 5092 | 45 | 47.5 | 35.7 | 77.33 | 〃 | 64561 | 6695 | 6608 | 6282 | 41.3 | 32.6 |
| 5095 | 46 | 46.1 | 35.2 | 6.35 | 〃 | 65913 | 6611 | 6604 | 6262 | 34.9 | 34.2 |
| 5098 | 47 | 44.5 | 33.6 | 2.02 | 〃 | 66165 | 6623 | 6620 | 6240 | 38.3 | 38.0 |

* Weather Station Seismometer Room.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5100 | 48 | 43.7 | 32.0 | 1.79 | | 〃 | 66273 | 6633 | 6631 | 6229 | 40.4 | 40.2 |
| 5102 | 49 | 43.1 | 30.5 | 29.85 | | 〃 | 65655 | 6658 | 6624 | 6221 | 43.7 | 40.3 |
| 5104 | 50 | 42.6 | 28.8 | 72.04 | | 〃 | 65013 | 6724 | 6643 | 6214 | 51.0 | 42.9 |
| 5106 | 51 | 41.9 | 26.8 | 52.13 | | 〃 | 65408 | 6702 | 6643 | 6204 | 49.8 | 43.9 |
| 5108 | 52 | 40.6 | 25.4 | 4.65 | | 〃 | 66738 | 6688 | 6683 | 6186 | 50.2 | 49.7 |
| 5109 | 53 | 39.7 | 25.1 | 9.57 | | 〃 | 66840 | 6714 | 6703 | 6173 | 54.1 | 53.0 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV | 12 | 66846 | 6714 | 6703 | 6172 | 54.2 | 53.1 |
| 5110 | 54 | 39.4 | 24.3 | 2.45 | | 〃 | 66994 | 6707 | 6704 | 6169 | 53.8 | 53.5 |
| 5113 | 55 | 37.6 | 22.1 | 1.89 | | 〃 | 67128 | 6719 | 6717 | 6144 | 57.5 | 57.3 |
| 5115 | 56 | 36.1 | 21.4 | 3.56 | | 〃 | 66826 | 6694 | 6690 | 6123 | 57.1 | 56.7 |
| 5116 | 57 | 35.1 | 21.3 | 25.59 | | 〃 | 66495 | 6729 | 6700 | 6110 | 61.9 | 59.0 |
| 5119 | 58 | 33.8 | 18.5 | 3.32 | | 〃 | 66861 | 6696 | 6693 | 6092 | 60.4 | 60.1 |

Synoptic Results for Tokushima Prefecture ( II ).

| B.M. | No. | $\varphi$ | $\lambda$ | $H$ (m) | Date 1951 | $g$ 979. | $g_0$ 979. | $g_0''$ 979. | $\gamma_0$ 979. | $\Delta g_0$ (mgal) | $\Delta g_0''$ (mgal) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 33° ′ | 133° ′ | | | | | | | | |
| 5031 | 106 | 50.3 | 47.3 | 196.26 | IV 15 | 60704 | 6676 | 6457 | 6321 | 35.5 | 13.6 |
| 5033 | 107 | 52.0 | 46.5 | 181.09 | 〃 | 61135 | 6672 | 6470 | 6345 | 32.7 | 12.5 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 16 | 61135 | 6672 | 6470 | 6345 | 32.7 | 12.5 |
| 5036 | 108 | 54.5 | 45.7 | 163.56 | 〃 | 61526 | 6657 | 6474 | 6379 | 27.8 | 9.5 |
| 5038 | 109 | 56.2 | 45.5 | 147.62 | 〃 | 62522 | 6708 | 6543 | 6403 | 30.5 | 14.0 |
| 5040 | 110 | 58.0 | 45.7 | 128.82 | 〃 | 63519 | 6749 | 6605 | 6428 | 32.1 | 17.7 |
| 5042 | 111 | 59.1 | 47.4 | 118.42 | 〃 | 64312 | 6797 | 6664 | 6444 | 35.3 | 22.0 |
| | | 34° | | | | | | | | | |
| 5043 | 112 | 00.0 | 47.4 | 111.91 | 〃 | 64712 | 6817 | 6691 | 6456 | 36.1 | 23.5 |
| 5045 | 113 | 01.6 | 48.1 | 142.77 | 〃 | 64335 | 6874 | 6714 | 6478 | 39.6 | 23.6 |
| 5047 | 114 | 01.9 | 50.6 | 82.36 | 〃 | 65783 | 6833 | 6740 | 6483 | 35.0 | 25.7 |
| 5051 | 115 | 03.6 | 49.4 | 434.89 | 〃 | 57930 | 7135 | 6649 | 6506 | 62.9 | 14.3 |
| 5052 | 116 | 04.1 | 49.0 | 543.34 | 〃 | 55815 | 7258 | 6650 | 6513 | 74.5 | 13.7 |

Synoptic Results for Tokushima Prefecture ( III ).

| B.M. | No. | $\varphi$ | $\lambda$ | $H$ (m) | Date 1953 | $g$ 979. | $g_0$ 979. | $g_0''$ 979. | $\gamma_0$ 979. | $\Delta g_0$ (mgal) | $\Delta g_0''$ (mgal) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 34° ′ | 134° ′ | | | | | | | | |
| No. 8 | 3665 | 13.8 | 38.7 | 18.38 | IV 3 | 68070 | 6864 | 6843 | 6649 | 21.5 | 19.4 |
| 299 | 3664 | 11.9 | 37.8 | 3.04 | 〃 | 68293 | 6839 | 6835 | 6622 | 21.7 | 21.3 |
| 300 | 3663 | 11.1 | 37.5 | 8.49 | 〃 | 68197 | 6846 | 6836 | 6611 | 23.5 | 22.5 |
| 302 | 3658 | 10.4 | 36.7 | 1.48 | 〃 | 68249 | 6830 | 6828 | 6601 | 22.9 | 22.7 |
| 303 | 3659 | 10.1 | 35.5 | 1.71 | 〃 | 68103 | 6816 | 6814 | 6597 | 21.9 | 21.7 |
| 304 | 3660 | 09.8 | 34.3 | 2.19 | 〃 | 67937 | 6801 | 6798 | 6593 | 20.8 | 20.5 |

## (36) Kagawa Prefecture.

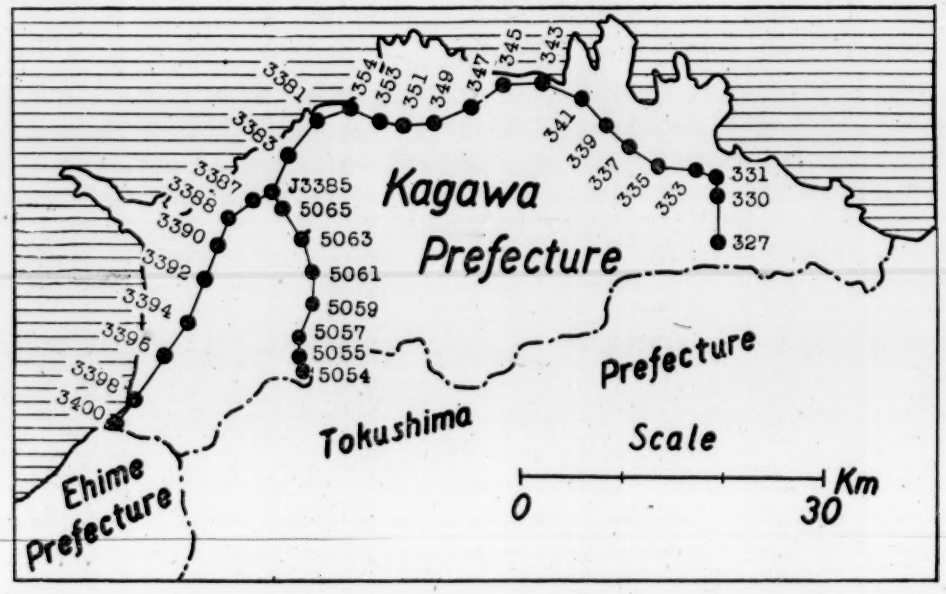



Fig. 5. Gravity Stations in Kagawa Prefecture.

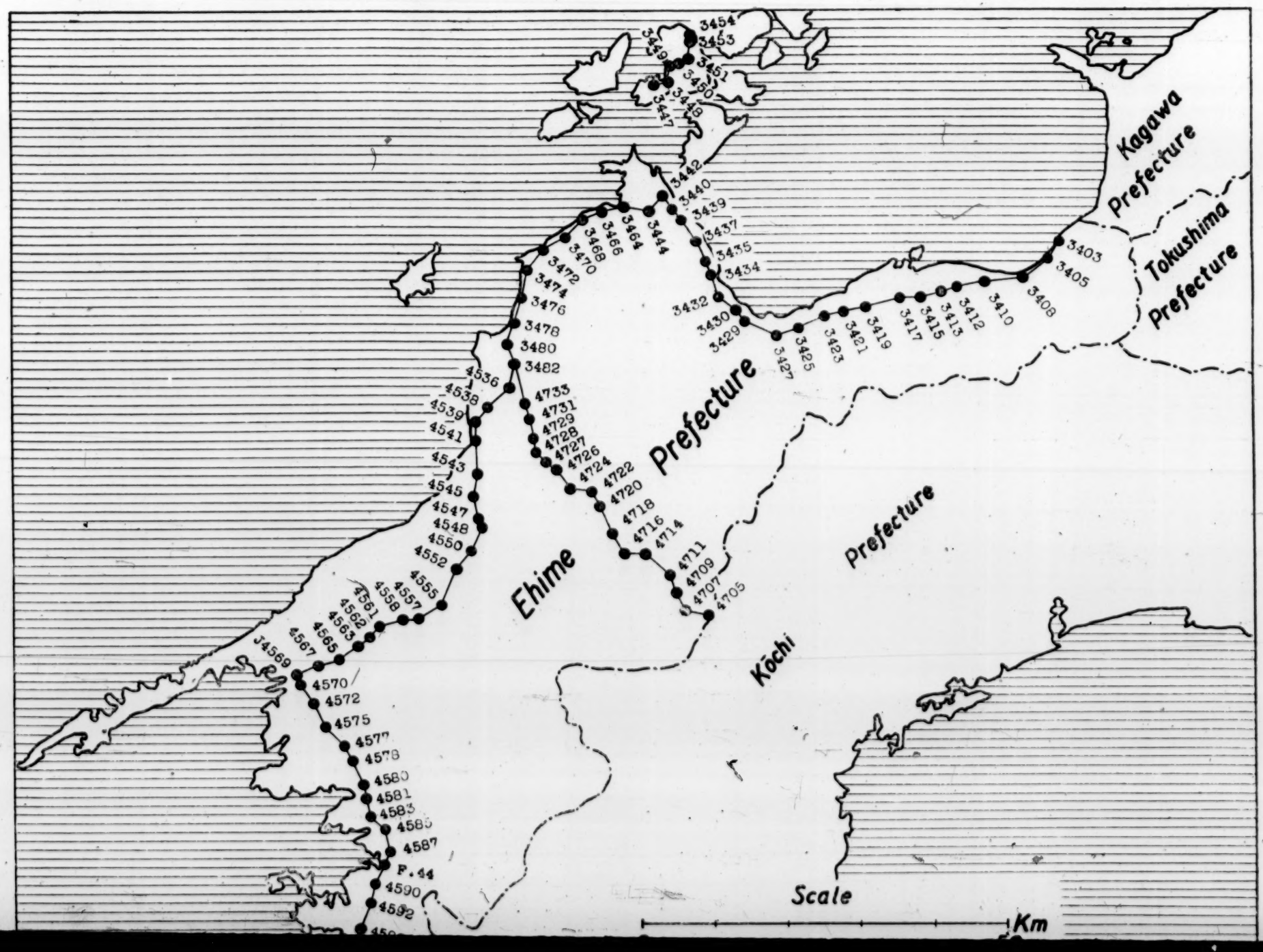
Table XIII. Synoptic Results for Kagawa Prefecture ( I ).

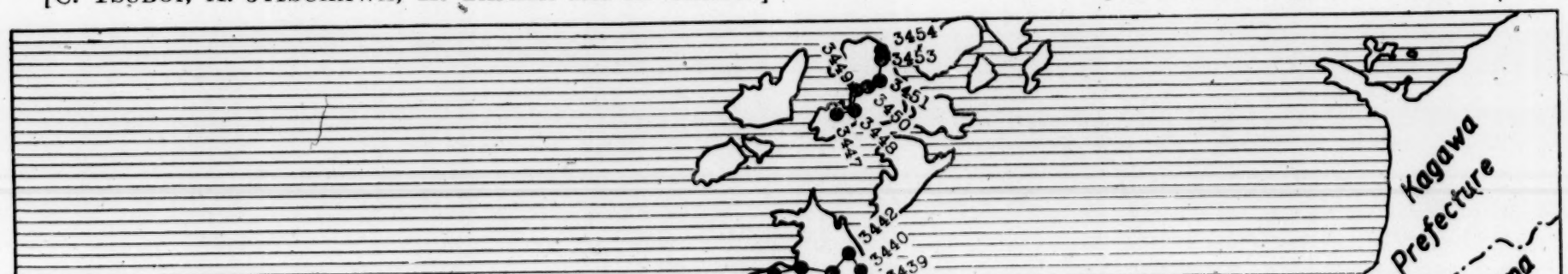
| B.M. | No. | $\varphi$ | $\lambda$ | $H$ (m) | Date 1951 | $g$ 979. | $g_0$ 979. | $g_0''$ 979. | $\gamma_0$ 979. | $\Delta g_0$ (mgal) | $\Delta g_0''$ (mgal) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 34° ′ | 133° ′ | | | | | | | | |
| 3400 | 131 | 02.5 | 37.0 | 2.78 | IV 17 | 66419 | 6651 | 6647 | 6491 | 16.0 | 15.6 |
| 3398 | 130 | 04.1 | 38.5 | 4.18 | 〃 | 66597 | 6673 | 6668 | 6513 | 16.0 | 15.5 |
| 3396 | 129 | 06.0 | 39.9 | 14.85 | 〃 | 67081 | 6754 | 6737 | 6540 | 21.4 | 19.7 |
| 3394 | 128 | 07.5 | 41.5 | 10.89 | 〃 | 67542 | 6788 | 6776 | 6561 | 22.7 | 21.5 |
| 3392 | 127 | 09.1 | 42.6 | 23.27 | 〃 | 67928 | 6865 | 6839 | 6583 | 28.2 | 25.6 |
| 3390 | 126 | 11.2 | 43.1 | 9.70 | 〃 | 68995 | 6929 | 6919 | 6613 | 31.6 | 30.6 |
| 3388 | 125 | 12.1 | 44.0 | 61.03 | 〃 | 68402 | 7029 | 6960 | 6625 | 40.4 | 33.5 |
| 3387 | 124 | 13.1 | 44.9 | 21.87 | 〃 | 68971 | 6965 | 6940 | 6639 | 32.6 | 30.1 |
| J. 3385 | 1 | 14.8 | 47.2 | 18.50 | IV 8 | 69583 | 7015 | 6995 | 6663 | 35.2 | 33.2 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 16 | 69583 | 7015 | 6995 | 6663 | 35.2 | 33.2 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 17 | 69591 | 7016 | 6996 | 6663 | 35.3 | 33.3 |
| 3383 | 2 | 16.8 | 47.8 | 4.73 | IV 8 | 70634 | 7078 | 7073 | 6691 | 38.7 | 38.2 |
| 3381 | 3 | 18.9 | 49.2 | 2.89 | 〃 | 70889 | 7098 | 7095 | 6721 | 37.7 | 37.4 |
| J. 354 | 4 | 18.7 | 51.4 | 1.12 | 〃 | 71063 | 7110 | 7109 | 6718 | 39.2 | 39.1 |
| 353 | 5 | 18.7 | 52.9 | 3.20 | 〃 | 71174 | 7127 | 7124 | 6718 | 40.9 | 40.6 |
| 351 | 6 | 18.0 | 55.0 | 12.65 | 〃 | 70678 | 7107 | 7093 | 6708 | 39.9 | 38.5 |
| 349 | 7 | 18.0 | 57.1 | 31.72 | 〃 | 70278 | 7126 | 7090 | 6708 | 41.8 | 38.2 |
| 347 | 8 | 18.7 | 59.5 | 13.16 | 〃 | 71167 | 7157 | 7143 | 6718 | 43.9 | 42.5 |
| | | | 134° | | | | | | | | |
| 345 | 9 | 20.2 | 01.0 | 3.35 | 〃 | 72045 | 7215 | 7211 | 6739 | 47.6 | 47.2 |
| 343 | 10 | 20.5 | 03.5 | 2.42 | 〃 | 71719 | 7179 | 7177 | 6743 | 43.6 | 43.4 |
| Takamatsu W.S.* | 11 | 19.0 | 03.5 | 9.83 | 〃 | 70895 | 7120 | 7109 | 6722 | 39.8 | 38.7 |
| 341 | 12 | 19.1 | 04.9 | 2.95 | 〃 | 70976 | 7107 | 7103 | 6723 | 38.4 | 38.0 |
| 339 | 13 | 17.5 | 06.4 | 12.06 | 〃 | 70235 | 7061 | 7047 | 6701 | 36.0 | 34.6 |
| 337 | 14 | 16.1 | 08.0 | 24.15 | 〃 | 69919 | 7066 | 7039 | 6681 | 38.5 | 35.8 |
| 335 | 15 | 15.8 | 10.5 | 36.09 | 〃 | 69586 | 7070 | 7030 | 6677 | 39.3 | 35.3 |
| 333 | 16 | 15.7 | 13.0 | 32.17 | 〃 | 69818 | 7081 | 7045 | 6676 | 40.5 | 36.9 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 9 | 69818 | 7081 | 7045 | 6676 | 40.5 | 36.9 |
| 331 | 17 | 15.0 | 15.1 | 52.33 | IV 8 | 69026 | 7064 | 7006 | 6666 | 39.8 | 34.0 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 9 | 69035 | 7065 | 7006 | 6666 | 39.9 | 34.0 |
| 330 | 18 | 14.0 | 15.1 | 97.37 | IV 8 | 67531 | 7054 | 6945 | 6652 | 40.2 | 29.3 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 9 | 67540 | 7055 | 6946 | 6652 | 40.3 | 29.4 |
| 327 | 19 | 11.6 | 15.2 | 284.71 | 〃 | 63001 | 7179 | 6860 | 6618 | 56.1 | 24.2 |

* Weather Station Seismometer Room.

Synoptic Results for Kagawa Prefecture ( II ).

| B.M. | No. | $\varphi$ | $\lambda$ | $H$ (m) | Date 1951 | $g$ 979. | $g_0$ 979. | $g_0''$ 979. | $\gamma_0$ 979. | $\Delta g_0$ (mgal) | $\Delta g_0''$ (mgal) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 34° ′ | 133° ′ | | | | | | | | |
| 5065 | 123 | 14.0 | 47.4 | 26.03 | IV 16 | 69358 | 7016 | 6987 | 6652 | 36.4 | 33.5 |
| 5063 | 122 | 12.1 | 48.6 | 53.49 | 〃 | 68200 | 6985 | 6925 | 6625 | 36.0 | 30.0 |
| 5061 | 121 | 10.2 | 49.8 | 88.60 | 〃 | 66473 | 6921 | 6822 | 6599 | 32.2 | 22.3 |
| 5059 | 120 | 08.1 | 49.2 | 125.02 | 〃 | 64933 | 6879 | 6739 | 6569 | 31.0 | 17.0 |
| 5057 | 119 | 06.4 | 48.1 | 128.43 | 〃 | 64163 | 6813 | 6669 | 6545 | 26.8 | 12.4 |
| 5055 | 118 | 05.0 | 48.7 | 308.40 | 〃 | 60212 | 6973 | 6628 | 6526 | 44.7 | 10.2 |
| 5054 | 117 | 04.5 | 49.0 | 402.10 | 〃 | 58358 | 7077 | 6627 | 6519 | 55.8 | 10.8 |


Kagawa Prefecture
Tokushima Prefecture
Ehime Prefecture
Kōchi Prefecture
Scale
Km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Kagawa
Prefecture

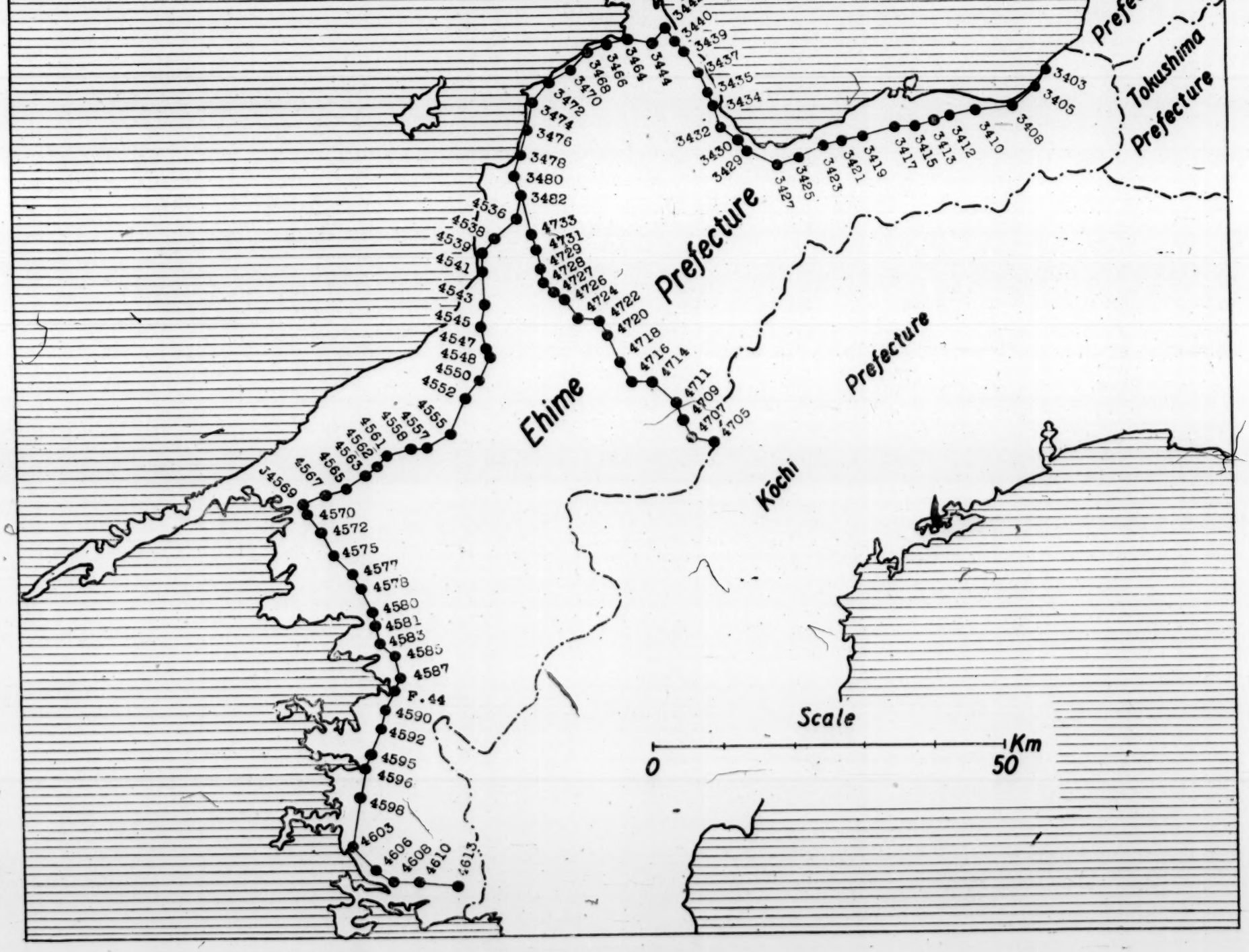



Fig. 6. Gravity Stations in Ehime Prefecture.

## (37) Ehime Prefecture.

Table XIV. Synoptic Results for Ehime Prefecture ( I ).

| B.M. | No. | $\varphi$ | $\lambda$ | $H$ (m) | Date 1951 | $g$ 979. | $g_0$ 979. | $g_0''$ 979. | $\gamma_0$ 979. | $\Delta g_0$ (mgal) | $\Delta g_0''$ (mgal) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 32° ′ | 132° ′ | | | | | | | | |
| 4613 | 232 | 57.4 | 39.0 | 93.58 | IV 25 | 57771 | 6066 | 5961 | 5589 | 47.7 | 37.2 |
| 4610 | 233 | 57.7 | 35.9 | 22.53 | 〃 | 59012 | 5971 | 5946 | 5594 | 37.7 | 35.2 |
| 4608 | 234 | 〃 | 33.6 | 4.47 | 〃 | 59140 | 5928 | 5923 | 5594 | 33.4 | 32.9 |
| 4606 | 235 | 58.5 | 32.0 | 14.23 | 〃 | 58827 | 5927 | 5911 | 5604 | 32.3 | 30.7 |
| | | 33° | | | | | | | | | |
| 4603 | 236 | 00.6 | 29.9 | 19.15 | 〃 | 58578 | 5917 | 5896 | 5633 | 28.4 | 26.3 |
| 4598 | 237 | 04.9 | 30.5 | 20.95 | 〃 | 59190 | 5984 | 5960 | 5692 | 29.2 | 26.8 |
| 4596 | 238 | 06.9 | 31.4 | 2.35 | 〃 | 59513 | 5959 | 5956 | 5720 | 23.9 | 23.6 |
| 4595 | 239 | 07.9 | 31.7 | 6.05 | 〃 | 59640 | 5983 | 5976 | 5734 | 24.9 | 24.2 |
| 4592 | 240 | 10.0 | 33.3 | 51.97 | 〃 | 58718 | 6032 | 5974 | 5763 | 26.9 | 21.1 |
| 4590 | 241 | 11.7 | 33.0 | 11.01 | 〃 | 59497 | 5984 | 5971 | 5786 | 19.8 | 18.5 |
| F. 44 | 242 | 12.9 | 34.1 | 10.15 | 〃 | 59631 | 5994 | 5983 | 5803 | 19.1 | 18.0 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 26 | 59627 | 5994 | 5983 | 5803 | 19.1 | 18.0 |
| Uwajima W.S.* | 243 | 13.5 | 33.5 | 43.46 | IV 25 | 58797 | 6014 | 5965 | 5811 | 20.3 | 15.4 |
| 〃** | 244 | 〃 | 〃 | 42.00 | 〃 | 58844 | 6015 | 5968 | 5811 | 20.4 | 15.7 |
| 4587 | 245 | 14.3 | 34.4 | 12.50 | IV 26 | 59572 | 5996 | 5982 | 5822 | 17.4 | 16.0 |
| 4585 | 246 | 15.8 | 33.8 | 61.01 | 〃 | 58449 | 6033 | 5965 | 5843 | 19.0 | 12.2 |
| 4583 | 247 | 16.6 | 32.6 | 1.60 | 〃 | 59469 | 5952 | 5950 | 5854 | 9.8 | 9.6 |
| 4581 | 248 | 18.5 | 32.4 | 65.99 | 〃 | 58126 | 6016 | 5942 | 5880 | 13.6 | 6.2 |
| 4580 | 249 | 19.3 | 32.1 | 240.91 | 〃 | 54421 | 6186 | 5916 | 5891 | 29.5 | 2.5 |
| 4578 | 250 | 21.0 | 31.4 | 279.58 | 〃 | 54147 | 6278 | 5965 | 5914 | 36.4 | 5.1 |
| 4577 | 251 | 21.6 | 31.0 | 212.90 | 〃 | 55600 | 6217 | 5979 | 5923 | 29.4 | 5.6 |
| 4575 | 252 | 23.0 | 29.5 | 218.89 | 〃 | 55841 | 6260 | 6015 | 5942 | 31.8 | 7.3 |
| 4572 | 253 | 24.8 | 27.8 | 143.53 | 〃 | 57673 | 6210 | 6050 | 5967 | 24.3 | 8.3 |
| 4570 | 254 | 26.4 | 26.5 | 15.50 | 〃 | 61212 | 6169 | 6152 | 5989 | 18.0 | 16.3 |
| J. 4569 | 255 | 27.3 | 25.7 | 2.76 | 〃 | 61363 | 6145 | 6142 | 6002 | 14.3 | 14.0 |
| 4567 | 256 | 28.1 | 28.1 | 35.87 | 〃 | 60240 | 6135 | 6095 | 6013 | 12.2 | 8.2 |
| 4565 | 257 | 28.6 | 29.9 | 183.06 | 〃 | 57621 | 6327 | 6122 | 6020 | 30.7 | 10.2 |
| 4563 | 258 | 29.7 | 31.8 | 20.06 | 〃 | 60606 | 6123 | 6100 | 6035 | 8.8 | 6.5 |
| 4562 | 259 | 30.3 | 32.7 | 15.09 | 〃 | 60635 | 6110 | 6093 | 6043 | 6.7 | 5.0 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 27 | 60630 | 6110 | 6093 | 6043 | 6.7 | 5.0 |

* Weather Station Barometer Room. ** Weather Station Bench Mark.

Table XIV. ( I ) (Continued)

| B.M. | No. | $\varphi$ | $\lambda$ | $H$ (m) | Date 1951 | $g$ 979. | $g_0$ 979. | $g_0''$ 979. | $\gamma_0$ 979. | $\Delta g_0$ (mgal) | $\Delta g_0''$ (mgal) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 33° ′ | 132° ′ | | | | | | | | |
| 4561 | 260 | 31.1 | 33.1 | 12.25 | IV 27 | 60696 | 6107 | 6094 | 6054 | 5.3 | 4.0 |
| 4558 | 261 | 32.0 | 36.4 | 16.01 | 〃 | 60772 | 6127 | 6109 | 6067 | 6.0 | 4.2 |
| 4557 | 262 | 31.8 | 37.6 | 37.90 | 〃 | 60925 | 6210 | 6167 | 6064 | 14.6 | 10.3 |
| 4555 | 263 | 33.2 | 39.3 | 71.23 | 〃 | 59763 | 6196 | 6116 | 6083 | 11.3 | 3.3 |
| 4552 | 264 | 35.6 | 33.8 | 107.80 | 〃 | 59502 | 6283 | 6162 | 6117 | 16.6 | 4.5 |
| 4550 | 265 | 37.9 | 42.0 | 164.21 | 〃 | 58382 | 6345 | 6161 | 6149 | 19.6 | 1.2 |
| 4548 | 266 | 38.5 | 42.8 | 173.93 | 〃 | 57670 | 6304 | 6109 | 6157 | 14.7 | − 4.8 |
| 4547 | 267 | 39.6 | 42.3 | 235.02 | 〃 | 56980 | 6423 | 6160 | 6172 | 25.1 | − 1.2 |
| 4545 | 268 | 41·1 | 42.7 | 329.46 | 〃 | 55430 | 6560 | 6191 | 6193 | 36.7 | − 0.2 |
| 4543 | 269 | 43.0 | 42.5 | 66.19 | 〃 | 59670 | 6171 | 6097 | 6219 | − 4.8 | −12.2 |
| 4541 | 270 | 45.0 | 41.9 | 2.51 | 〃 | 59749 | 5983 | 5980 | 6247 | −26.4 | −26.7 |
| 4539 | 271 | 47.3 | 42.4 | 1.38 | 〃 | 59675 | 5972 | 5970 | 6279 | −30.7 | −30.9 |
| 4538 | 272 | 48.0 | 43.2 | 4.16 | 〃 | 59921 | 6005 | 6000 | 6289 | −28.4 | −28.9 |
| 4536 | 273 | 48.9 | 45.5 | 14.55 | 〃 | 60346 | 6080 | 6063 | 6301 | −22.1 | −23.8 |
| Matsuyama W.S.* | 166 | 50.4 | 47.0 | 32.92 | IV 19 | 59705 | 6072 | 6035 | 6322 | −25.0 | −28.7 |
| 3482 | 164 | 51.3 | 45.7 | 21.61 | 〃 | 61095 | 6176 | 6152 | 6335 | −15.9 | −18.3 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 20 | 61108 | 6178 | 6153 | 6335 | −15.7 | −18.2 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 27 | 61095 | 6176 | 6152 | 6335 | −15.9 | −18.3 |
| 3480 | 163 | 53.3 | 45.1 | 7.01 | IV 19 | 62128 | 6234 | 6227 | 6363 | −12.9 | −13.6 |
| 3478 | 162 | 55.8 | 45.6 | 4.64 | 〃 | 63061 | 6320 | 6315 | 6398 | − 7.8 | − 8.3 |
| 3476 | 161 | 57.9 | 46.5 | 3.10 | 〃 | 63965 | 6406 | 6403 | 6427 | − 2.1 | − 2.4 |
| 3474 | 160 | 59.1 | 46.9 | 4.70 | 〃 | 64624 | 6477 | 6472 | 6444 | 3.3 | 2.8 |
| | | 34° | | | | | | | | | |
| 3472 | 159 | 00.6 | 48.5 | 2.82 | 〃 | 65485 | 6557 | 6554 | 6465 | 9.2 | 8.9 |
| 3470 | 158 | 01.3 | 50.2 | 31.26 | 〃 | 65148 | 6611 | 6576 | 6474 | 13.7 | 10.2 |
| 3468 | 157 | 02.6 | 51.6 | 1.83 | 〃 | 66196 | 6625 | 6623 | 6492 | 13.3 | 13.1 |
| 3466 | 156 | 03.4 | 53.7 | 2.91 | 〃 | 66386 | 6648 | 6644 | 6504 | 14.4 | 14.0 |
| 3464 | 155 | 03.8 | 56.0 | 2.21 | 〃 | 66438 | 6651 | 6648 | 6509 | 14.2 | 13.9 |
| 3444 | 154 | 07.1 | 57.4 | 3.50 | 〃 | 67652 | 6776 | 6772 | 6555 | 22.1 | 21.7 |
| 3442 | 153 | 05.1 | 59.3 | 6.84 | 〃 | 66990 | 6720 | 6712 | 6527 | 19.3 | 18.5 |
| | | | 133° | | | | | | | | |
| 3440 | 152 | 03.4 | 00.1 | 3.80 | IV 18 | 66731 | 6685 | 6681 | 6504 | 18.1 | 17.7 |

* Weather Station Seismometer Room.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3439 | 151 | 02.7 | 01.2 | 2.97 | 〃 | 66801 | 6689 | 6686 | 6494 | 19.5 | 19.2 |
| 3437 | 150 | 01.1 | 02.5 | 2.60 | 〃 | 66620 | 6670 | 6667 | 6472 | 19.8 | 19.5 |
| | | 33° | | | | | | | | | |
| 3435 | 149 | 59.2 | 03.3 | 14.64 | 〃 | 65576 | 6603 | 6586 | 6449 | 15.4 | 13.7 |
| 3434 | 148 | 58.3 | 03.2 | 48.73 | 〃 | 64382 | 6589 | 6534 | 6432 | 15.7 | 10.2 |
| 3432 | 147 | 56.4 | 04.1 | 10.23 | 〃 | 64138 | 6445 | 6434 | 6406 | 3.9 | 2.8 |
| 3430 | 146 | 55.5 | 05.8 | 1.69 | 〃 | 63825 | 6388 | 6386 | 6393 | − 0.5 | − 0.7 |
| 3429 | 145 | 54.8 | 06.5 | 2.82 | 〃 | 63716 | 6380 | 6377 | 6384 | − 0.4 | − 0.7 |
| 3427 | 144 | 53.4 | 07.9 | 25.49 | 〃 | 63255 | 6404 | 6376 | 6364 | 4.0 | 1.2 |
| 3425 | 143 | 53.6 | 10.3 | 5.08 | 〃 | 64190 | 6435 | 6429 | 6367 | 6.8 | 6.2 |
| 3423 | 142 | 54.8 | 12.4 | 2.71 | 〃 | 64110 | 6419 | 6416 | 6384 | 3.5 | 3.2 |
| 3421 | 141 | 55.1 | 14.9 | 47.66 | 〃 | 63650 | 6512 | 6459 | 6388 | 12.4 | 7.1 |
| 3419 | 140 | 55.6 | 17.4 | 44.43 | 〃 | 63673 | 6504 | 6455 | 6395 | 10.9 | 6.0 |
| 3417 | 139 | 56.1 | 19.9 | 61.63 | 〃 | 63392 | 6529 | 6460 | 6402 | 12.7 | 5.8 |
| 3415 | 138 | 56.0 | 22.3 | 159.93 | 〃 | 61538 | 6647 | 6468 | 6400 | 24.7 | 6.8 |
| 3413 | 137 | 56.9 | 24.4 | 52.10 | 〃 | 63647 | 6526 | 6467 | 6413 | 11.3 | 5.4 |
| 3412 | 136 | 57.3 | 25.6 | 33.31 | 〃 | 64055 | 6508 | 6471 | 6419 | 8.9 | 5.2 |
| 3410 | 135 | 57.6 | 28.1 | 30.55 | 〃 | 64267 | 6521 | 6487 | 6423 | 9.8 | 6.4 |
| 3408 | 134 | 57.8 | 30.6 | 8.42 | 〃 | 65058 | 6532 | 6522 | 6425 | 10.7 | 9.7 |
| 3405 | 133 | 59.2 | 33.6 | 8.56 | 〃 | 65658 | 6592 | 6583 | 6445 | 14.7 | 13.8 |
| | | 34° | | | | | | | | | |
| 3403 | 132 | 00.7 | 34.5 | 2.91 | IV 17 | 66081 | 6617 | 6614 | 6466 | 15.1 | 14.8 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 18 | 66092 | 6618 | 6615 | 6466 | 15.2 | 14.9 |

Synoptic Results for Ehime Prefecture ( II ).

| B.M. | No. | $\varphi$ | $\lambda$ | $H$ (m) | Date 1951 | $g$ 979. | $g_0$ 979. | $g_0''$ 979. | $\gamma_0$ 979. | $\Delta g_0$ (mgal) | $\Delta g_0''$ (mgal) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 33° ′ | 132° ′ | | | | | | | | |
| 4733 | 167 | 48.6 | 46.8 | 23.68 | IV 20 | 60545 | 6128 | 6101 | 6297 | −16.9 | −19.6 |
| 4731 | 168 | 46.5 | 47.7 | 38.90 | 〃 | 60101 | 6130 | 6087 | 6268 | −13.8 | −18.1 |
| 4729 | 169 | 44.6 | 47.9 | 121.07 | 〃 | 59529 | 6327 | 6191 | 6242 | 8.5 | − 5.1 |
| 4728 | 170 | 44.2 | 48.5 | 230.57 | 〃 | 57618 | 6473 | 6215 | 6236 | 23.7 | − 2.1 |
| 4727 | 171 | 43.8 | 49.2 | 326.85 | 〃 | 56007 | 6609 | 6244 | 6230 | 37.9 | 1.4 |
| 4726 | 172 | 43.2 | 49.7 | 430.11 | 〃 | 54078 | 6735 | 6254 | 6222 | 51.3 | 3.2 |
| 4724 | 173 | 42.1 | 50.9 | 609.07 | 〃 | 50378 | 6917 | 6236 | 6207 | 71.0 | 2.9 |
| 4722 | 174 | 42.0 | 52.8 | 649.95 | 〃 | 50086 | 7014 | 6287 | 6205 | 80.9 | 8.2 |
| 4720 | 175 | 40.2 | 53.5 | 518.39 | 〃 | 52529 | 6853 | 6273 | 6180 | 67.3 | 9.3 |
| 4718 | 176 | 38.4 | 54.6 | 471.05 | 〃 | 53042 | 6758 | 6231 | 6155 | 60.3 | 7.6 |

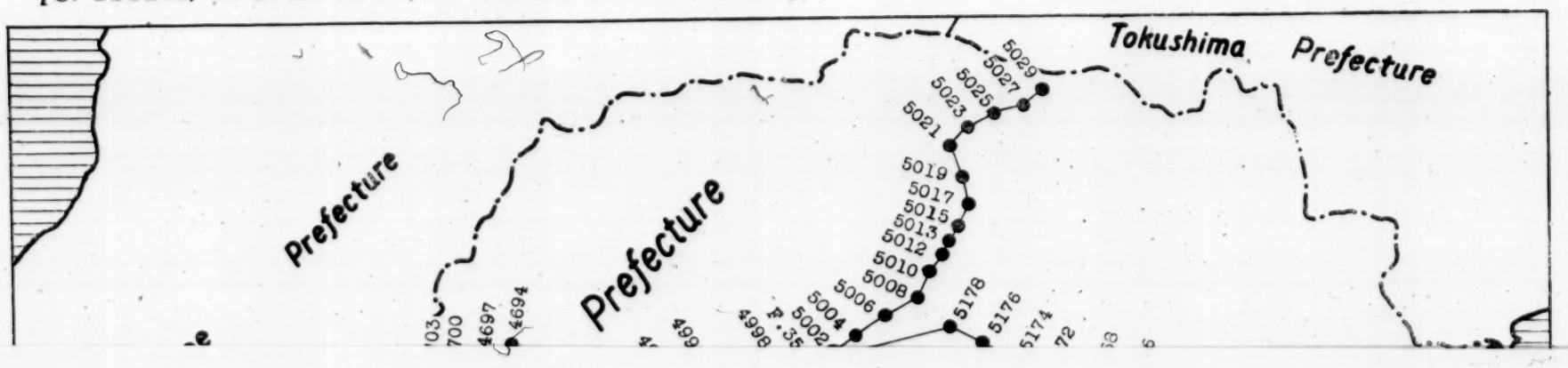
Table XIV. ( II ) (Continued)

| B.M. | No. | $\varphi$ | $\lambda$ | $H$ (m) | Date 1951 | $g$ 979. | $g_0$ 979. | $g_0''$ 979. | $\gamma_0$ 979. | $\Delta g_0$ (mgal) | $\Delta g_0''$ (mgal) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 33° ′ | 132° ′ | | | | | | | | |
| 4716 | 177 | 37.0 | 55.4 | 425.17 | IV 20 | 53714 | 6684 | 6208 | 6136 | 54.8 | 7.2 |
| 4714 | 178 | 36.9 | 57.7 | 396.03 | 〃 | 54083 | 6630 | 6187 | 6135 | 49.5 | 5.2 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 21 | 54079 | 6630 | 6187 | 6135 | 49.5 | 5.2 |
| 4711 | 179 | 35.4 | 59.7 | 350.01 | 〃 | 55236 | 6604 | 6212 | 6114 | 49.0 | 9.8 |
| | | | 133° | | | | | | | | |
| 4709 | 180 | 33.8 | 00.4 | 317.10 | 〃 | 54682 | 6447 | 6092 | 6092 | 35.5 | 0.0 |
| 4707 | 181 | 32.4 | 00.9 | 263.00 | 〃 | 55568 | 6368 | 6074 | 6072 | 29.6 | 0.2 |
| 4705 | 182 | 32.4 | 03.0 | 243.81 | 〃 | 56342 | 6387 | 6114 | 6072 | 31.5 | 4.2 |

Synoptic Results for Ehime Prefecture ( III ).

| B.M. | No. | $\varphi$ | $\lambda$ | $H$ (m) | Date 1952 | $g$ 979. | $g_0$ 979. | $g_0''$ 979. | $\gamma_0$ 979. | $\Delta g_0$ (mgal) | $\Delta g_0''$ (mgal) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 34° ′ | 132° ′ | | | | | | | | |
| 3447 | 2288 | 12.9 | 58.6 | 24.71 | VIII 28 | 67414 | 6818 | 6790 | 6636 | 18.2 | 15.4 |
| 3448 | 2289 | 13.2 | 59.6 | 2.19 | 〃 | 67933 | 6800 | 6798 | 6641 | 15.9 | 15.7 |
| 3449 | 2290 | 14.1 | 59.9 | 1.60 | 〃 | 67977 | 6803 | 6801 | 6653 | 15.0 | 14.8 |
| | | | 133° | | | | | | | | |
| 3450 | 2291 | 14.7 | 00.4 | 6.59 | 〃 | 67927 | 6813 | 6806 | 6662 | 15.1 | 14.4 |
| 3451 | 2292 | 15.1 | 01.5 | 76.36 | 〃 | 66790 | 6915 | 6829 | 6667 | 24.8 | 16.2 |
| 3453 | 2293 | 16.9 | 02.2 | 3.21 | 〃 | 68711 | 6880 | 6877 | 6693 | 18.7 | 18.4 |
| 3454 | 2294 | 17.5 | 01.5 | 3.12 | 〃 | 68685 | 6878 | 6875 | 6701 | 17.7 | 17.4 |

[C. Tsuboi, A. Jitsukawa, H. Tajima and A. Okada.] [B. E. R. I., Suppl. Vol. IV, Pl. II.]

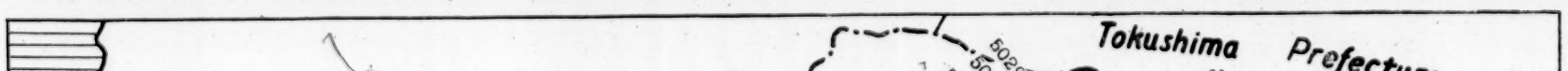


| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4709 | 180 | 33.8 | 00.4 | 317.10 | 〃 | 54682 | 6447 | 6092 | 6092 | 35.5 | 0.0 |
| 4707 | 181 | 32.4 | 00.9 | 263.00 | 〃 | 55568 | 6368 | 6074 | 6072 | 29.6 | 0.2 |
| 4705 | 182 | 32.4 | 03.0 | 243.81 | 〃 | 56342 | 6387 | 6114 | 6072 | 31.5 | 4.2 |

Synoptic Results for Ehime Prefecture ( III ).

| B.M. | No. | $\varphi$ | $\lambda$ | $H$ (m) | Date 1952 | $g$ 979. | $g_0$ 979. | $g_0''$ 979. | $\gamma_0$ 979. | $\Delta g_0$ (mgal) | $\Delta g_0''$ (mgal) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 34° ′ | 132° ′ | | | | | | | | |
| 3447 | 2288 | 12.9 | 58.6 | 24.71 | VIII 28 | 67414 | 6818 | 6790 | 6636 | 18.2 | 15.4 |
| 3448 | 2289 | 13.2 | 59.6 | 2.19 | 〃 | 67933 | 6800 | 6798 | 6641 | 15.9 | 15.7 |
| 3449 | 2290 | 14.1 | 59.9 | 1.60 | 〃 | 67977 | 6803 | 6801 | 6653 | 15.0 | 14.8 |
| | | | 133° | | | | | | | | |
| 3450 | 2291 | 14.7 | 00.4 | 6.59 | 〃 | 67927 | 6813 | 6806 | 6662 | 15.1 | 14.4 |
| 3451 | 2292 | 15.1 | 01.5 | 76.36 | 〃 | 66790 | 6915 | 6829 | 6667 | 24.8 | 16.2 |
| 3453 | 2293 | 16.9 | 02.2 | 3.21 | 〃 | 68711 | 6880 | 6877 | 6693 | 18.7 | 18.4 |
| 3454 | 2294 | 17.5 | 01.5 | 3.12 | 〃 | 68685 | 6878 | 6875 | 6701 | 17.7 | 17.4 |





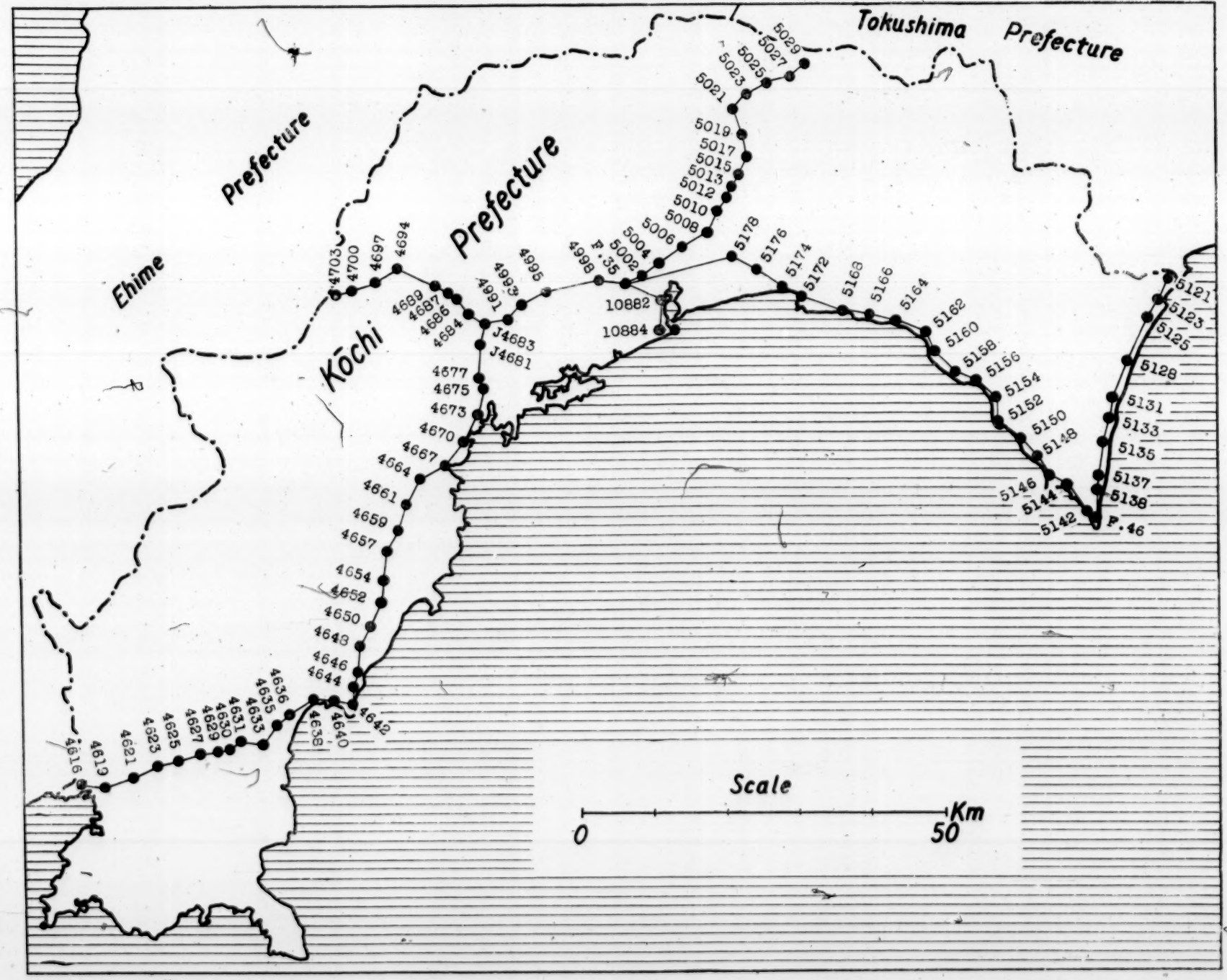



Fig. 7. Gravity Stations in Kôchi Prefecture.

## (38) Kôchi Prefecture.

Table XV. Synoptic Results for Kôchi Prefecture ( I ).

| B.M. | No. | $\varphi$ | $\lambda$ | $H$ (m) | Date 1951 | $g$ 979. | $g_0$ 979. | $g_0''$ 979. | $\gamma_0$ 979. | $\Delta g_0$ (mgal) | $\Delta g_0''$ (mgal) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 33° ′ | 134° ′ | | | | | | | | |
| 5121 | 59 | 32.5 | 17.7 | 2.50 | IV 12 | 66888 | 6697 | 6694 | 6074 | 62.3 | 62.0 |
| 5123 | 60 | 31.2 | 17.2 | 6.14 | 〃 | 66849 | 6704 | 6697 | 6055 | 64.9 | 64.2 |
| 5125 | 61 | 29.7 | 16.2 | 17.59 | 〃 | 66733 | 6728 | 6708 | 6035 | 69.3 | 67.3 |
| 5128 | 62 | 26.5 | 14.3 | 7.84 | 〃 | 67050 | 6729 | 6720 | 5990 | 73.9 | 73.0 |
| 5131 | 63 | 23.8 | 12.8 | 8.66 | 〃 | 67603 | 6787 | 6777 | 5953 | 83.4 | 82.4 |
| 5133 | 64 | 22.1 | 12.5 | 7.45 | 〃 | 67311 | 6754 | 6746 | 5930 | 82.4 | 81.6 |
| 5135 | 65 | 20.1 | 12.1 | 6.76 | 〃 | 67460 | 6767 | 6759 | 5902 | 86·5 | 85.7 |
| 5137 | 66 | 18.1 | 11.5 | 7.87 | 〃 | 67521 | 6776 | 6768 | 5874 | 90.2 | 89.4 |
| 5138 | 67 | 17.0 | 11.3 | 6.50 | 〃 | 67858 | 6806 | 6799 | 5859 | 94.7 | 94.0 |
| F. 46 | 68 | 14.8 | 11.0 | 8.37 | 〃 | 68088 | 6835 | 6825 | 5829 | 100.6 | 99.6 |
| 5142 | 69 | 15.8 | 10.2 | 10.77 | 〃 | 68059 | 6839 | 6827 | 5843 | 99.6 | 98.4 |
| Muroto W.S.* | 70 | 15.0 | 10.9 | 176.44 | 〃 | 64062 | 6951 | 6753 | 5832 | 111.9 | 92.1 |
| △ | 71 | 14.9 | 10.9 | 184.90 | 〃 | 64086 | 6979 | 6772 | 5830 | 114.9 | 94.2 |
| 5144 | 72 | 17.4 | 08.8 | 6.36 | 〃 | 68163 | 6836 | 6829 | 5865 | 97.1 | 96.4 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 13 | 68105 | 6830 | 6823 | 5865 | 96.5 | 95.8 |
| M. 1 | 73 | 17.4 | 09.9 | 15.85 | 〃 | 67849 | 6834 | 6816 | 5865 | 96.9 | 95.1 |
| 5146 | 74 | 17.9 | 06.8 | 6.99 | 〃 | 67794 | 6801 | 6793 | 5872 | 92.9 | 92.1 |
| 5148 | 75 | 19.8 | 06.0 | 6.85 | 〃 | 67474 | 6769 | 6761 | 5898 | 87.1 | 86.3 |
| 5150 | 76 | 21.2 | 04.2 | 94.9 | 〃 | 67259 | 6755 | 6745 | 5917 | 83.8 | 82.8 |
| 5152 | 77 | 22.1 | 02.4 | 7.57 | 〃 | 66884 | 6712 | 6703 | 5930 | 78.2 | 77.3 |
| 5154 | 78 | 24.0 | 02.2 | 7.60 | 〃 | 66488 | 6672 | 6664 | 5956 | 71.6 | 70.8 |
| 5156 | 79 | 25.5 | 01.0 | 5.89 | 〃 | 66166 | 6635 | 6628 | 5977 | 65.8 | 65.1 |
| | | | 133° | | | | | | | | |
| 5158 | 80 | 26.1 | 59.0 | 8.76 | 〃 | 65817 | 6609 | 6599 | 5985 | 62.4 | 61.4 |
| 5160 | 81 | 26.5 | 57.0 | 8.17 | 〃 | 65785 | 6604 | 6595 | 5990 | 61.4 | 60.5 |
| 5162 | 82 | 29.0 | 56.4 | 4.31 | 〃 | 65781 | 6591 | 6587 | 6025 | 56.6 | 56.2 |
| 5164 | 83 | 29.9 | 54.2 | 9.22 | 〃 | 64897 | 6618 | 6508 | 6037 | 48.1 | 47.1 |
| 5166 | 84 | 30.2 | 51.6 | 7.78 | 〃 | 65207 | 6545 | 6536 | 6042 | 50.3 | 49.4 |
| 5168 | 85 | 31.1 | 49.4 | 9.48 | 〃 | 64823 | 6512 | 6501 | 6054 | 45.8 | 44.7 |
| 5172 | 86 | 31.6 | 45.7 | 25.58 | 〃 | 64357 | 6515 | 6486 | 6061 | 45.4 | 42.5 |
| 5174 | 87 | 32.3 | 43.6 | 7.61 | 〃 | 64417 | 6465 | 6457 | 6071 | 39.4 | 38.6 |

* Weather Station Seismometer Room.

Table XV. ( I ) (Continued)

| B.M. | No. | $\varphi$ | $\lambda$ | $H$ (m) | Date 1951 | $g$ 979. | $g_0$ 979. | $g_0''$ 979. | $\gamma_0$ 979. | $\Delta g_0$ (mgal) | $\Delta g_0''$ (mgal) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 33° ′ | 133° ′ | | | | | | | | |
| 5176 | 88 | 33.5 | 41.8 | 18.59 | IV 13 | 63850 | 6442 | 6422 | 6087 | 35.5 | 33.5 |
| 5178 | 89 | 34.2 | 39.3 | 12.95 | 〃 | 63658 | 6406 | 6391 | 6097 | 30.9 | 29.4 |
| Kôchi W.S.* | 90 | 33.8 | 33.0 | 1.90 | 〃 | 63861 | 6392 | 6390 | 6092 | 30.0 | 29.8 |
| 5002 | 91 | 33.3 | 32.0 | 2.13 | 〃 | 63664 | 6373 | 6371 | 6085 | 28.8 | 28.6 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 15 | 〃 | 〃 | 〃 | 〃 | 〃 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 21 | 〃 | 〃 | 〃 | 〃 | 〃 | 〃 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 23 | 〃 | 〃 | 〃 | 〃 | 〃 | 〃 |
| F. 35 | 194 | 33.2 | 30.0 | 9.23 | IV 21 | 63609 | 6389 | 6379 | 6083 | 30.6 | 29.6 |
| 4998 | 193 | 32.9 | 27.1 | 14.31 | 〃 | 63466 | 6391 | 6375 | 6079 | 31.2 | 29.6 |
| 4995 | 192 | 32.2 | 23.5 | 19.70 | 〃 | 63170 | 6378 | 6356 | 6069 | 30.9 | 28.7 |
| 4993 | 191 | 31.6 | 21.2 | 18.82 | 〃 | 63037 | 6362 | 6341 | 6061 | 30.1 | 28.0 |
| 4991 | 199 | 30.3 | 19.7 | 35.92 | IV 23 | 62238 | 6335 | 6294 | 6043 | 29.2 | 25.1 |
| J. 4683 | 200 | 29.8 | 17.6 | 80.39 | 〃 | 61323 | 6380 | 6290 | 6036 | 34.4 | 25.4 |
| J. 4681 | 201 | 27.9 | 17.1 | 115.71 | 〃 | 60301 | 6387 | 6258 | 6010 | 37.7 | 24.8 |
| 4677 | 202 | 26.2 | 17.4 | 85.16 | 〃 | 60909 | 6354 | 6258 | 5986 | 36.8 | 27.2 |
| 4675 | 203 | 24.8 | 17.9 | 6.47 | 〃 | 63062 | 6326 | 6319 | 5967 | 35.9 | 35.2 |
| 4673 | 204 | 23.2 | 17.4 | 4.92 | 〃 | 63254 | 6341 | 6335 | 5945 | 39.6 | 39.0 |
| 4670 | 205 | 21.7 | 15.5 | 4.07 | 〃 | 63089 | 6322 | 6317 | 5924 | 39.8 | 39.3 |
| 4667 | 206 | 20.0 | 13.7 | 3.37 | 〃 | 63142 | 6325 | 6321 | 5901 | 42.4 | 42.0 |
| 4664 | 207 | 18.8 | 12.1 | 113.47 | 〃 | 60634 | 6414 | 6287 | 5884 | 53.0 | 40.3 |
| 4661 | 208 | 17.8 | 10.7 | 274.85 | 〃 | 57374 | 6586 | 6278 | 5870 | 71.6 | 40.8 |
| 4659 | 209 | 16.1 | 10.2 | 244.85 | 〃 | 57887 | 6544 | 6270 | 5847 | 69.7 | 42.3 |
| 4657 | 210 | 14.0 | 09.3 | 237.69 | 〃 | 57902 | 6524 | 6258 | 5818 | 70.6 | 44.0 |
| 4654 | 211 | 12.2 | 08.6 | 210.36 | 〃 | 58346 | 6484 | 6248 | 5793 | 69.1 | 45.5 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 24 | 58344 | 6484 | 6248 | 5793 | 69.1 | 45.5 |
| 4652 | 212 | 10.2 | 08.3 | 258.69 | 〃 | 57286 | 6527 | 6237 | 5765 | 76.2 | 47.2 |
| 4650 | 213 | 08.6 | 07.9 | 74.57 | 〃 | 60748 | 6305 | 6222 | 5743 | 56.2 | 47.9 |
| 4648 | 214 | 07.0 | 07.3 | 29.92 | 〃 | 61515 | 6244 | 6210 | 5721 | 52.3 | 48.9 |
| 4646 | 215 | 05.9 | 06.2 | 12.78 | 〃 | 61732 | 6213 | 6198 | 5706 | 50.7 | 49.2 |
| 4644 | 216 | 04.3 | 06.6 | 5.28 | 〃 | 61962 | 6213 | 6207 | 5684 | 52.9 | 52.3 |
| 4642 | 217 | 03.0 | 06.1 | 16.16 | 〃 | 61643 | 6214 | 6196 | 5666 | 54.8 | 53.0 |
| 4640 | 218 | 01.7 | 05.0 | 9.44 | 〃 | 61779 | 6207 | 6196 | 5648 | 55.9 | 54.8 |
| 4638 | 219 | 02.0 | 02.6 | 13.44 | 〃 | 61333 | 6176 | 6161 | 5652 | 52.4 | 50.9 |
| 4636 | 220 | 00.9 | 02.0 | 4.53 | 〃 | 61359 | 6150 | 6145 | 5637 | 51.3 | 50.8 |
| | | | 132° | | | | | | | | |
| 4635 | 221 | 00.2 | 58.9 | 8.37 | 〃 | 61147 | 6141 | 6131 | 5628 | 51.3 | 50.3 |

* Weather Station Seismometer Room.

| | | 32° | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4633 | 222 | 58.9 | 58.0 | 2.80 | 〃 | 61248 | 6133 | 6130 | 5610 | 52.3 | 52.0 |
| 4631 | 223 | 59.2 | 56.1 | 11.64 | 〃 | 60920 | 6128 | 6115 | 5614 | 51.4 | 50.1 |
| 4630 | 224 | 58.6 | 55.2 | 5.36 | 〃 | 60964 | 6113 | 6107 | 5606 | 50.7 | 50.1 |
| 4629 | 225 | 58.5 | 54.1 | 5.92 | 〃 | 60815 | 6100 | 6093 | 5604 | 49.6 | 48.9 |
| 4627 | 226 | 〃 | 52.2 | 9.15 | 〃 | 60514 | 6080 | 6069 | 5604 | 47.6 | 46.5 |
| 4625 | 227 | 57.7 | 50.5 | 6.07 | 〃 | 60543 | 6073 | 6066 | 5594 | 47.9 | 47.2 |
| 4623 | 228 | 57.5 | 48.3 | 8.73 | 〃 | 60337 | 6061 | 6051 | 5590 | 47.1 | 46.1 |
| 4621 | 229 | 56.7 | 46.2 | 47.87 | 〃 | 59306 | 6078 | 6025 | 5580 | 49.8 | 44.5 |
| 4619 | 230 | 56.1 | 44.0 | 2.71 | 〃 | 59959 | 6004 | 6001 | 5571 | 43.3 | 43.0 |
| 〃 | 〃 | 〃 | 〃 | 〃 | IV 25 | 59962 | 6005 | 6002 | 5571 | 43.4 | 43.1 |
| 4616 | 231 | 56.3 | 41.1 | 78.43 | 〃 | 58244 | 6066 | 5979 | 5574 | 49.2 | 40.5 |

Synoptic Results for Kôchi Prefecture ( II ).

| B.M. | No. | $\varphi$ | $\lambda$ | $H$ (m) | Date 1951 | $g$ 979. | $g_0$ 979. | $g_0''$ 979. | $\gamma_0$ 979. | $\Delta g_0$ (mgal) | $\Delta g_0''$ (mgal) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 33° ′ | 133° ′ | | | | | | | | |
| J. 5004 | 92 | 34.6 | 34.1 | 1.17 | IV 15 | 64084 | 6412 | 6411 | 6103 | 30.9 | 30.8 |
| 5006 | 93 | 35.6 | 36.1 | 18.78 | 〃 | 64258 | 6484 | 6463 | 6117 | 36.7 | 34.6 |
| 5008 | 94 | 36.1 | 38.1 | 18.45 | 〃 | 64115 | 6468 | 6448 | 6123 | 34.5 | 32.5 |
| 5010 | 95 | 37.6 | 38.6 | 120.59 | 〃 | 62282 | 6600 | 6465 | 6144 | 45.6 | 32.1 |
| 5012 | 96 | 38.7 | 39.7 | 278.14 | 〃 | 59527 | 6811 | 6500 | 6160 | 65.1 | 34.0 |
| 5013 | 97 | 39.3 | 40.0 | 383.37 | 〃 | 57580 | 6941 | 6512 | 6168 | 77.3 | 34.4 |
| 5015 | 98 | 40.5 | 41.1 | 345.36 | 〃 | 58207 | 6887 | 6500 | 6185 | 70.2 | 31.5 |
| 5017 | 99 | 41.7 | 41.6 | 329.30 | 〃 | 58323 | 6849 | 6480 | 6201 | 64.8 | 27.9 |
| 5019 | 100 | 43.7 | 41.1 | 319.01 | 〃 | 59299 | 6914 | 6557 | 6229 | 68.5 | 32.8 |
| 5021 | 101 | 45.3 | 40.1 | 251.56 | 〃 | 60923 | 6869 | 6587 | 6251 | 61.8 | 33.6 |
| 5023 | 102 | 46.4 | 41.6 | 228.81 | 〃 | 60339 | 6740 | 6484 | 6267 | 47.3 | 21.7 |
| 5025 | 103 | 46.9 | 43.2 | 222.43 | 〃 | 60535 | 6740 | 6491 | 6274 | 46.6 | 21.7 |
| 5027 | 104 | 47.4 | 45.2 | 249.18 | 〃 | 59959 | 6765 | 6486 | 6281 | 48.4 | 20.5 |
| 5029 | 105 | 48.6 | 46.5 | 214.78 | 〃 | 60194 | 6682 | 6442 | 6297 | 38.5 | 14.5 |

Synoptic Results for Kôchi Prefecture ( III ).

| B.M. | No. | $\varphi$ | $\lambda$ | $H$ (m) | Date 1951 | $g$ 979. | $g_0$ 979. | $g_0''$ 979. | $\gamma_0$ 979. | $\Delta g_0$ (mgai) | $\Delta g_0''$ (mgal) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 33° ′ | 133° ′ | | | | | | | | |
| 4684 | 190 | 30.7 | 16.4 | 94.23 | IV 21 | 61091 | 6400 | 6295 | 6049 | 35.1 | 24.6 |
| 4686 | 189 | 31.8 | 15.3 | 64.04 | 〃 | 61585 | 6356 | 6284 | 6064 | 29.2 | 22.0 |
| 4687 | 188 | 32.2 | 14.6 | 74.88 | 〃 | 61197 | 6351 | 6267 | 6069 | 28.2 | 19.8 |
| 4689 | 187 | 33.1 | 13.1 | 97.61 | 〃 | 60448 | 6346 | 6237 | 6082 | 26.4 | 15.5 |
| 4694 | 186 | 34.8 | 10.2 | 106.95 | 〃 | 60014 | 6331 | 6212 | 6098 | 23.3 | 11.4 |
| 4697 | 185 | 33.4 | 08.0 | 130.44 | 〃 | 58907 | 6293 | 6147 | 6086 | 20.7 | 6.1 |
| 4700 | 184 | 32.5 | 06.5 | 249.80 | 〃 | 56721 | 6443 | 6164 | 6074 | 36.9 | 9.0 |
| 4703 | 183 | 32.2 | 04.8 | 193.05 | 〃 | 57038 | 6300 | 6084 | 6069 | 23.1 | 1.5 |

Synoptic Results for Kôchi Prefecture ( IV ).

| B.M. | No. | $\varphi$ | $\lambda$ | $H$ (m) | Date 1951 | $g$ 979. | $g_0$ 979. | $g_0''$ 979. | $\gamma_0$ 979. | $\Delta g_0$ (mgal) | $\Delta g_0''$ (mgal) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 33° ′ | 133° ′ | | | | | | | | |
| 10882 | 195 | 31.5 | 33.5 | 1.66 | IV 23 | 63583 | 6363 | 6362 | 6060 | 30.3 | 30.2 |
| 10884 | 196 | 29.7 | 33.1 | 1.28 | 〃 | 63946 | 6399 | 6397 | 6035 | 36.4 | 36.2 |
| Urato Tide Gauge | 197 | 29.7 | 34.2 | 2.69 | 〃 | 63975 | 6406 | 6403 | 6035 | 37.1 | 36.8 |
| 13 | 198 | 29.8 | 34.2 | 2.32 | 〃 | 64031 | 6410 | 6408 | 6036 | 37.4 | 37.2 |

# ウォルドン重力計による日本全国の重力測定

## 第一報　四国地方

坪井忠二・実川　顕・田島広一・岡田　惇

日本における重力のブーゲー異常の分布は，地震の震央の分布と密接な関係をもっている．重力異常は，地下構造の異常によって生ずるものであるから，上記の関係は，つまり，地震発生と地下構造の異常との間に密接な関係のあることを示している．従って，地震発生の機構を考えていく上には，重力異常の分布が，大切な基礎的資料の一つとなる．これは，地震研究所として，ぜひ遂行しなければならぬ研究の題目である．これが，この仕事を始めた第一の理由である．

之に加えて，日光地震 (1949)，南海地震 (1946) のときに，重力分布や，鉛直線偏倚の分布が時と共に変化したらしいという報告がある．この報告の眞僞はともかくとして，重力に経年変化があるか否かということは大問題である．これを研究するためには，日本全国におけるたくさんの点で重力を測っておいて，しばらくたってから再測しなければならない．その第一の礎石として，ともかく全国のくわしい重力測定を完了しておかなければならない．これが，この仕事を始めた第二の理由である．

このような目的をもった測定には，重力計を使うのが最も都合がよい．幸なことに，当局の諒解によって，地震研究所は，ウォルドン重力計を輸入することができた．我々は，この重力計によって，全国の重力測定に着手したのである．

測点の高さの精度と，再測のときの同定の容易さとを考えて，重力測定は，地理調査所の水準点において行うこととした．但し大体において，一つおきの水準点で測定することとした．日本全国には，水準点が約 10000 あるから，我々の測定は，およそ 5000 点で行うことになる．

この第1報は四国において得られた結果をまとめたものである．

ウォルドン重力計には，大ダイアルと小ダイアルとがついているが，我々は小ダイアルのみを使うことにした．

地球潮汐に対する補正，水準点上の重力計の高さに対する補正等は，普通の方法によって計算した．

四国における水準線は，第2図に示した通りである．これを第1，第2，第3ルートにわけ，それぞれについて，閉塞差を求め，時間に比例してそれを各点に分配した．

各点における重力が求められた後，高さの補正とブーゲー補正とを加えた．高さの補正を計算するには，$(0.308600\times h)$ の式を使った．又，ブーゲー補正を計算するには，岩石の密度を，2.6700 とした．又標準重力は，

$$\gamma_0 = 979.03000(1+0.530200\sin^2\varphi - 0.00000700\sin^2 2\varphi)$$

によって計算した．水準点の緯度は，せいぜい 0.′1 までしか解らないから，標準重力は，せいぜい 0.1 mgal までしか解らない．従って，重力の高度異常も，ブーゲー異常も，0.1 mgal までしか解らない．但し重力の値自身は，相対的には，0.02 mgal 程度の正しさがあると思われる．

測定の結果は，第 VIII 表—第 XI 表（ルート別）第 XII 表—第 XV 表（県別）に示してある．但し東京の基点における重力を 979.80100 ととってある，ブーゲー異常の分布は，第8図に示してある．

第8図から解る主なことがらは，次のとおりである．

1) ブーゲー異常は，南方，すなわち太平洋方面に行くにつれて大きくなる．+100 mgal という大きな値が，室戸岬において見出される．
2) 等異常線は，WSW—ENE に走る．これは四国の地質構造の走向と完全に一致する．
3) 中央構造線に沿って，ブーゲー異常は極小である．この極小帯は，東方で幅が狭くて勾配が急であるが，西方で広くゆるやかになる．
4) 松山の近くに，著るしい負の異常がある．この負の地域は，瀬戸内海をよこぎって，中国地方に届くらしい．これは，地殻の著るしい陥落を示している．
5) 香川県の北方に，著るしい正の異常がある．これは地下に，密度の大きい物質があることを示している．恐らくこれは，讃岐玄武岩を供給した本源に相当するのであろう．

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東 京 大 學

# 地震研究所彙報別册

第 4 號　第 1 册

## ウオルドン重力計による日本全國の重力測定
## (I) 四 國 地 方

昭 和 28 年 8 月

BULLETIN

OF

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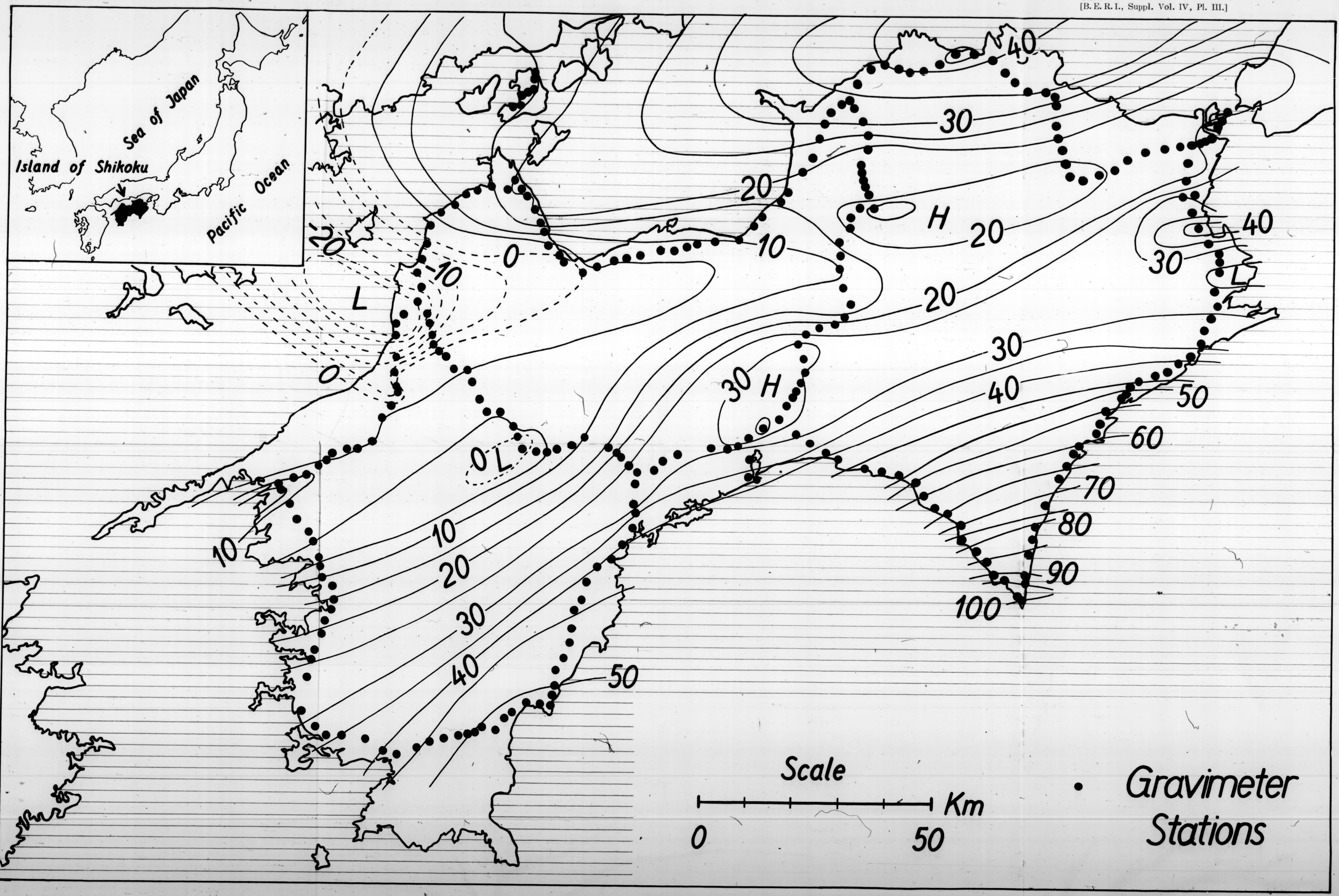
SUPPLEMENTARY VOLUME IV

PART I

**Gravity Survey along the Lines of Precise Levels throughout Japan by Means of a WORDEN Gravimeter**
**Part I. Shikoku District**

**August, 1953**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